



Enphase Energy System with IQ Battery 5P Owner's Guide



Warranty

To ensure optimal performance and reliability and to meet warranty requirements, the Enphase Energy System must be installed according to the instructions in the respective product quick install guides.

The Enphase Energy System equipment is intended to operate with an internet connection. Maintaining an internet connection is important, not only for updating software and firmware but also for measuring the health of the system. Failure to maintain an internet connection may have an impact on the warranty.

In addition, features like live status monitoring, energy and power monitoring, work when the system has an active internet connection.

Visit <https://enphase.com/en-gb/warranty/uk> for full terms and services.

Other information

Product information is subject to change without notice. All trademarks are recognized as the property of their respective owners. User documentation is updated frequently.

Check the Enphase website (<https://enphase.com/en-gb/installers/resources/documentation>) for the latest information.

Visit <https://enphase.com/en-gb/patents> for Enphase patent information. © 2023 Enphase Energy. All rights reserved.

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Audience

This manual is intended for use by owners of Enphase Energy Systems with IQ Battery 5P.

Environmental protection



Waste electrical products (including batteries) should not be disposed of with household waste. Refer to your local codes for disposal requirements.



ELECTRONIC DEVICES: DO NOT THROW AWAY.
Do not install or use the Enphase Energy System equipment if the equipment is damaged.

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Enphase Energy System with IQ Battery 5P



Enphase Energy System



System information

Key components



IQ Battery 5P

IQ Battery 5P stores energy and dispatches it when you need it. IQ Battery 5P is built on a distributed architecture platform. This modular design means you can quickly and easily expand your system as your needs grow.



IQ Microinverters

Under each solar panel lies an Enphase microinverter that converts DC power generated by the panel into AC power that your home can use.



IQ Gateway

The brain of the Enphase Energy System is Enphase IQ Gateway. The IQ Gateway collects production and performance data from IQ Series Microinverters and IQ Battery 5P, manages your system, and communicates with the Enphase cloud.



Enphase App

The Enphase App is a mobile app where you can monitor and control your system status from wherever you are and know exactly how much energy your solar PV system is producing. You can generate reports on energy production by day, week, month, or year.



Current Transformers

Current Transformers measure the current flowing through the system. The Enphase Energy System uses one CT to measure the solar power generated on your roof and one CT to measure the electricity consumption of your entire home. These currents measured are fed to the IQ Gateway.



Communications Kit

An accessory used to enable communication between IQ Battery 5P and IQ Gateway. This device connects to IQ Gateway via USB cable and IQ Batteries are connected to this device via control cables.

Component introduction

IQ Battery 5P

IQ Battery 5P is an AC-coupled storage system with an energy capacity of 5.0 kWh. It houses two major components inside the cabinet which make the IQ Battery 5P powerful and reliable:

- The battery packs, internal to IQ Battery 5P, store energy for later use, such as night-time or lower solar production circumstances. IQ Battery 5P can supply up to 3.2 kVA of power to the loads in your home.
- The IQ Microinverters, internal to IQ Battery 5P, convert stored DC energy into usable AC electricity for your home, ensuring reliable power supply by sharing the load.

IQ Battery 5P communicates through wired communication to the Communications Kit that then communicates through USB to the IQ Gateway.



IQ Gateway and Communications Kit

IQ Gateway collects production and performance data from your Enphase Energy System. It then transmits the data to the Enphase Cloud through Ethernet or Wi-Fi to make it visible in the Enphase App. The IQ Gateway also houses advanced algorithms that control and optimise your Enphase Energy System for the best performance. The IQ Gateway uses a Communications Kit as an accessory to enable communication with IQ Battery 5P.



System block diagram

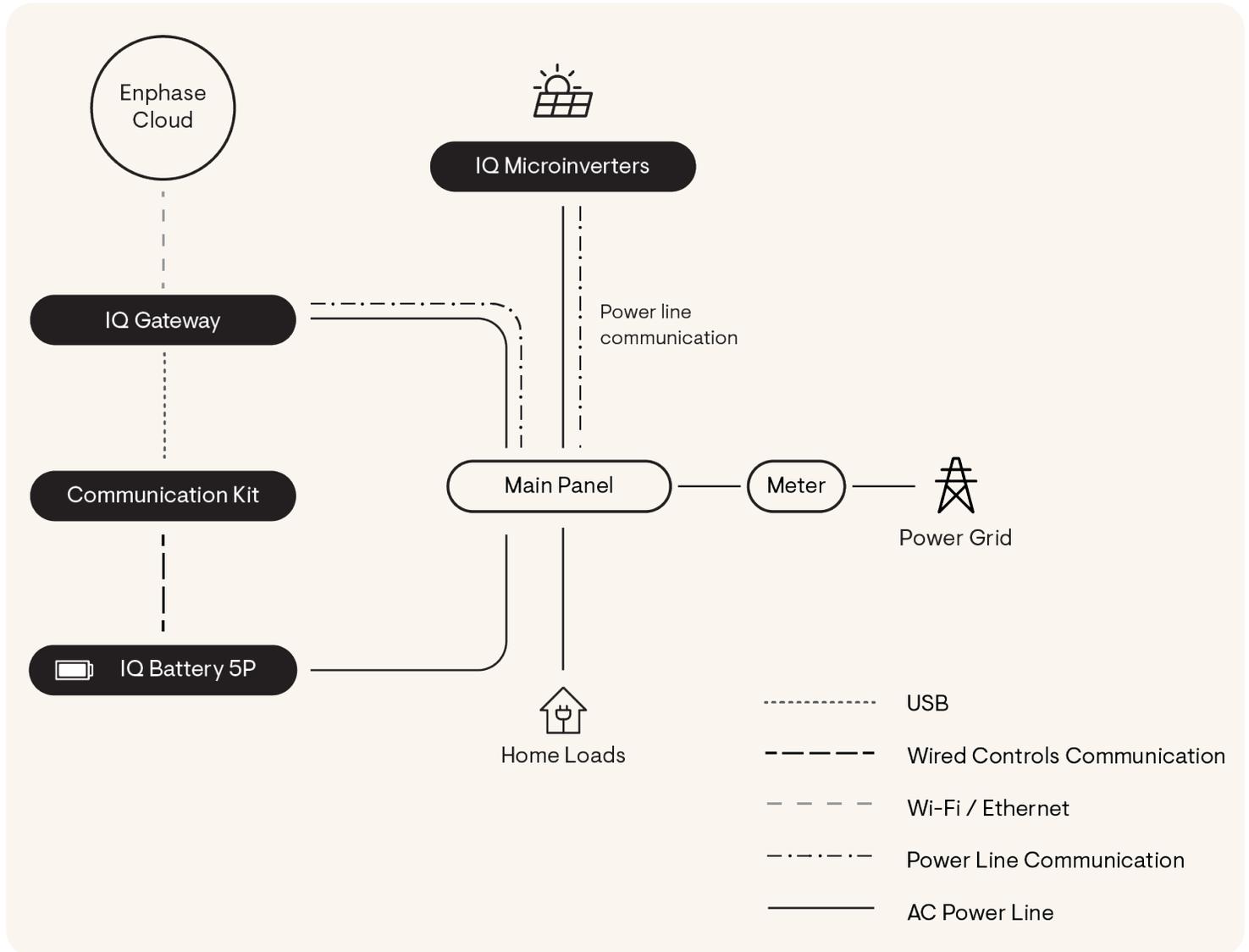
The power supply to your home can either be single-phase or three-phase.

A single-phase power supply is a two-wire alternating current (AC) circuit with Line and Neutral.

A three-phase power supply is a four-wire AC circuit with Line 1, Line 2, Line 3, and Neutral.

A typical home power supply has a voltage of 230 V (L-N) and frequency of 50 Hz.

Below you can find a simplified representation of your Enphase Energy System.



System monitoring and management

Make, use, save, and export your own power right from the palm of your hand with the Enphase App. You can quickly and easily monitor and control your Enphase Energy System and modify system settings directly from the Enphase App.

NOTE: Internet connectivity for your Enphase Energy System is essential to keep your system updated and provide accurate information on the Enphase App.

Getting started

Instructions to activate your Enphase App account are sent to you at the email address you provided to your installer. Look for an email with the subject line “Activate Your Online Solar Monitoring Account.” from donotreply@enphaseenergy.com. You will also receive monthly emails from this address. Be sure to unblock this address from your spam or junk mail filters. Read the Enphase App terms of service at <https://enphase.com/en-gb/legal/terms-of-service>.

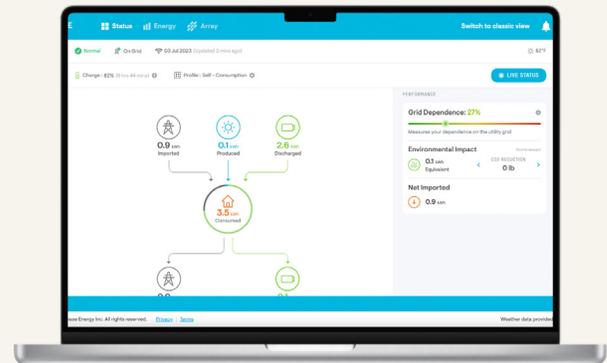
Enphase App

The mobile application is available for both iOS and Android devices. You can install the latest version of Enphase App from the App Store or Play Store.



Enphase web application

You can access the Enphase App using your internet browser on your desktop or mobile device. Log in to the Enphase App at <https://enlighten.enphaseenergy.com>.

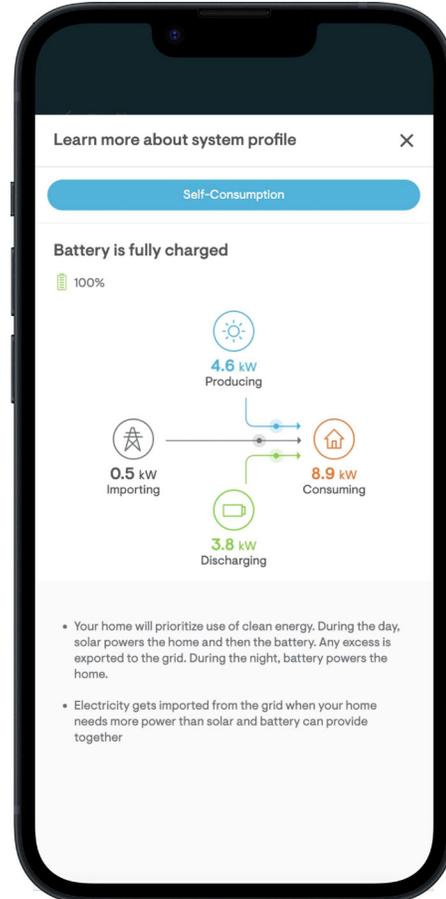
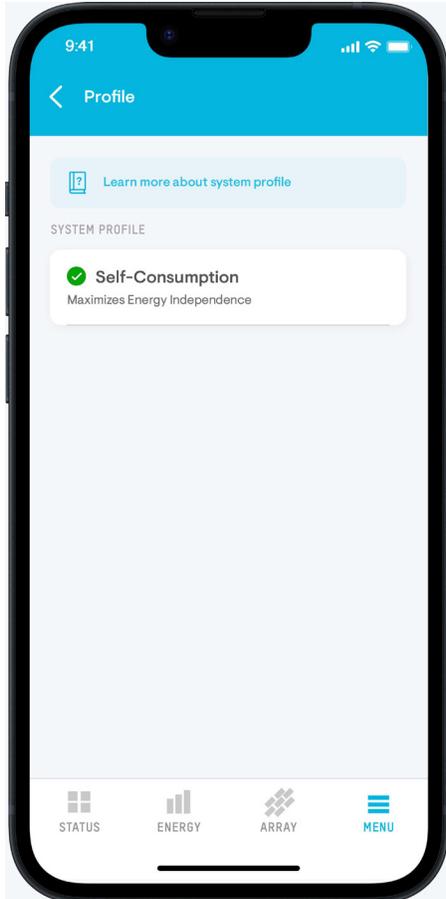


Know your smart profile

Your Enphase Energy System features a Self-Consumption smart profile, which helps maximising usage of solar and storage power at your home.

Self-Consumption profile always prioritises your consumption or storage of your produced solar energy. It enables you to use as much as possible of your generated energy at your own home.

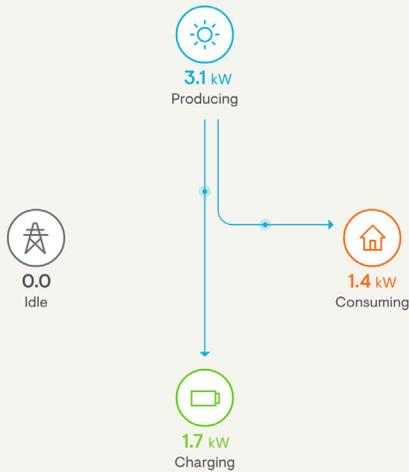
This profile is only available for Enphase Energy Systems that include compatible Enphase IQ Batteries.



Operation in Self-Consumption profile

Normal operation in the Self-Consumption profile always prioritises the consumption or storage of solar production over export to the grid. In jurisdictions where export is not allowed (zero export regulations), energy is never exported to the grid.

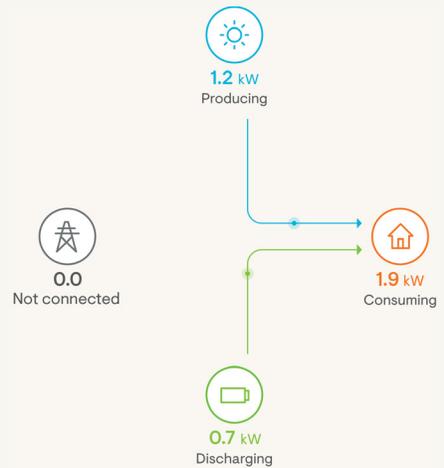
During daylight hours, energy is used to power the home or charge the batteries.



During regular operation, solar production powers the home and charges the battery.



Once the battery is fully charged, solar production powers the home, and the excess solar power generated is exported to the grid.

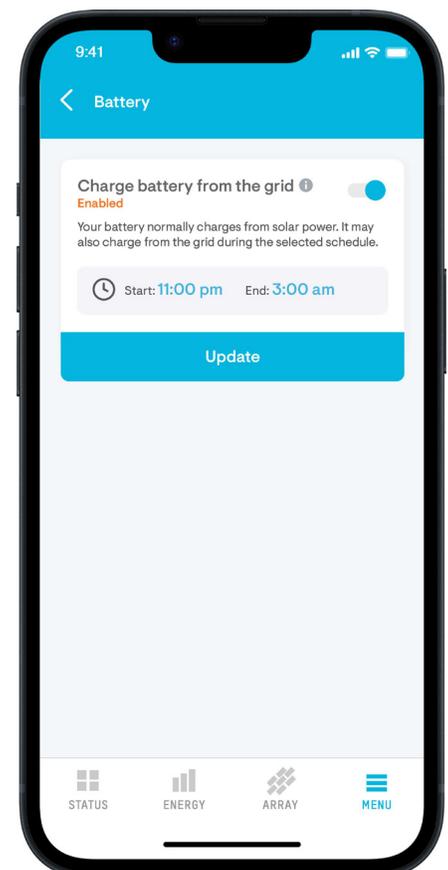
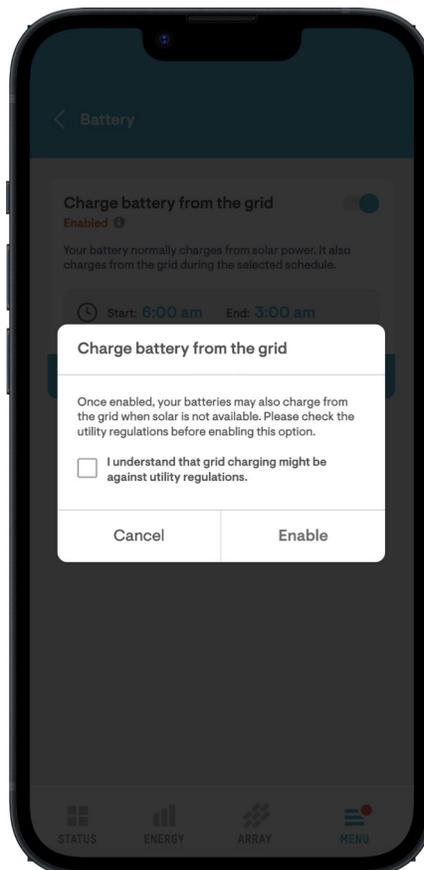
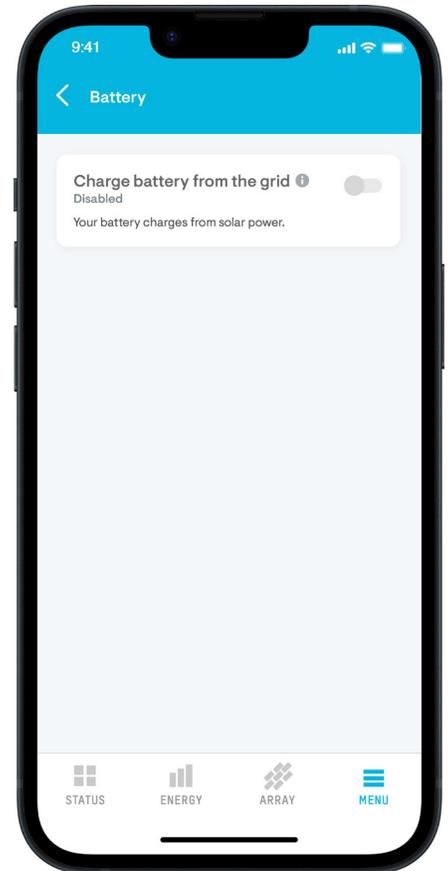
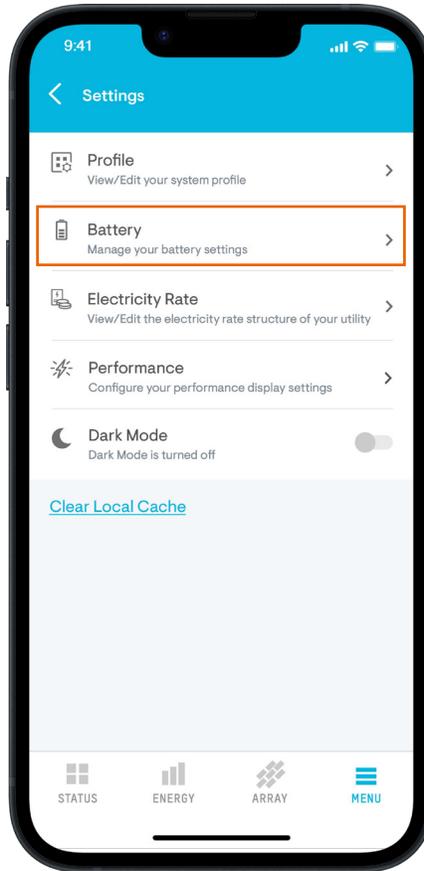


In cases when the home is consuming more power than solar production can provide, the battery starts discharging to meet the power requirement.

Charge battery from the grid mode

Charge battery from the grid is an additional feature that you can enable to charge your battery from the grid when the energy prices are low.

To enable Charge battery from the grid through the Enphase App go to **Menu**→ **Settings**→ **Battery**. As shown below you can schedule a time window during which your batteries can be charged from the grid. Usual practice is to enable/schedule Charge battery from the Grid when the utility rates are low.



System care



The Enphase Energy System equipment is outdoor rated. However, it should not be immersed in water.



Do not block vents or store flammable, sparking, or explosive objects near the equipment.



Store all objects that could fall onto or collide with the unit away from the equipment.



Never rest anything on top of the equipment.



For a system installed indoors, a nearby smoke detector is recommended. For an outdoor installation, a smoke detector is not necessary.



Use a slightly damp (water only) or dry cloth to clean or dust the equipment as needed. Do not use cleaning solvents or harsh chemicals on the equipment.



Troubleshooting

System recovery after shutdown

Your system has experienced a shutdown if it is no longer providing power to your home. System shutdowns may be caused by failure of any external wiring or accessories of the system, by a failure of the wired communication systems, or any other equipment failure related to the Enphase Energy System. Recovery steps following system shutdown vary depending on the cause of the shutdown. If solar production and grid are available and the batteries still do not recover, restart the batteries by cycling the DC switches on the IQ Battery 5P unit, see [Reset the IQ Battery 5P using DC switch](#) (on page 20).

Shutdown due to communications system failure

If your Enphase App shows "Microinverters not reporting" or "Batteries not reporting", give the system up to 15 to 20 minutes to recover on its own. The Enphase Energy System reconnects automatically and recovers from wired communications failures. If more than 20 minutes have elapsed and you do not see communication established, contact Enphase Support.

Overview of G100 and related shutdown

G100 is a compliance requirement for the UK that ensures safety of the customer's grid connection as well stability of the grid. The requirement asks for regulation of grid import and grid export power on the site.

- Grid import: This is the electricity drawn from the grid to supply home loads.
- Grid export: This is the surplus electricity from the solar PV system that is sent back to the grid.

As a requirement of UK G100 compliance, the Enphase system must stop solar production and battery operations if grid import power or grid export power exceeds the power limit criteria.

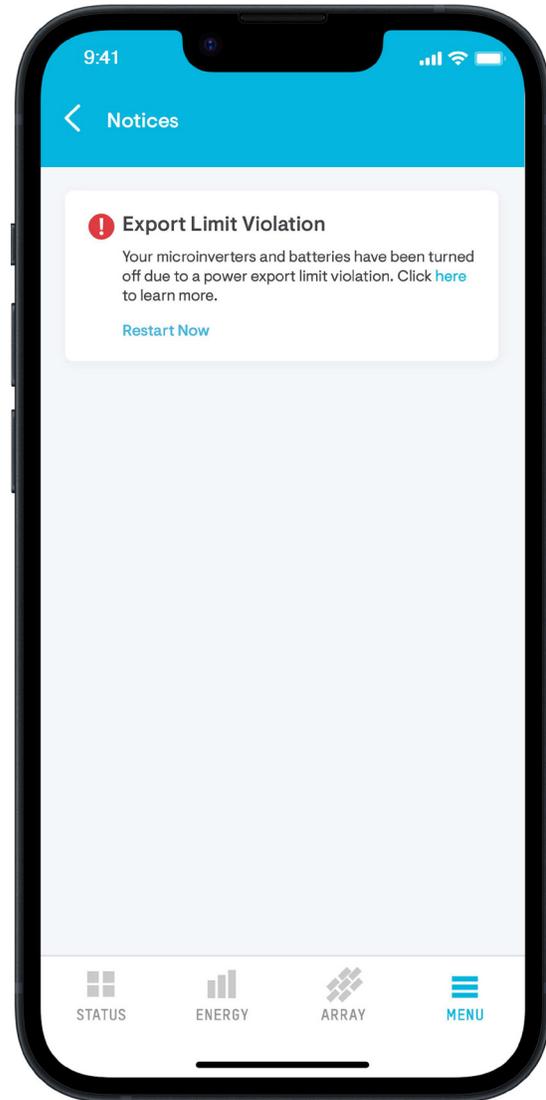
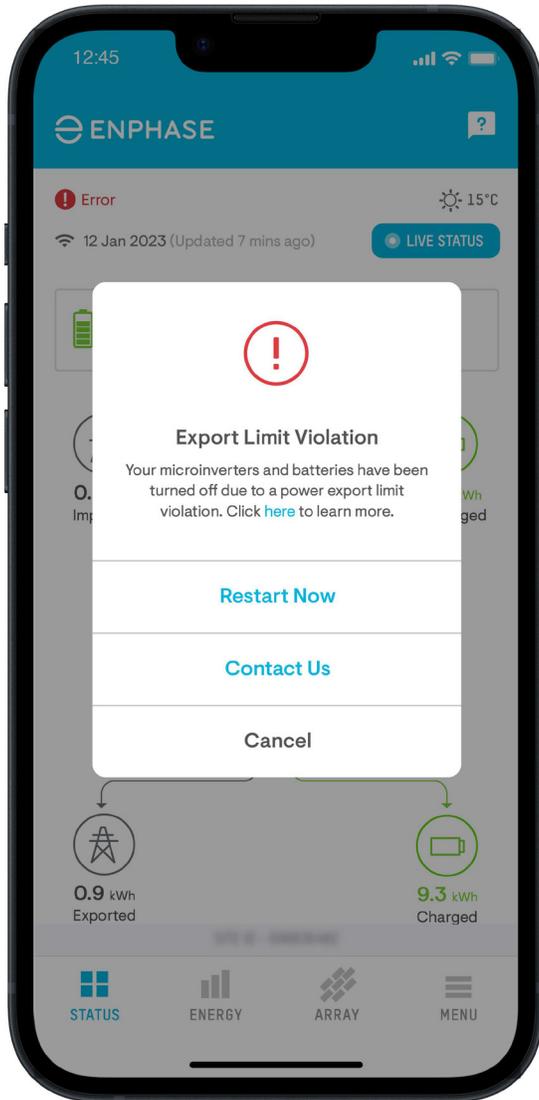
There can be two types of violations:

1. Grid export limit violation:

This is only applicable if your site has a pre-defined power export limit which is set by your installer during the commissioning of your Enphase Energy System.

If the solar PV system starts exporting power to the grid beyond the authorized export limit, the Enphase solar PV and battery system is required to fully shutdown and notify the homeowner and installer.

To self-recover the system from a grid export limit violation through the Enphase App, click **Restart Now**.



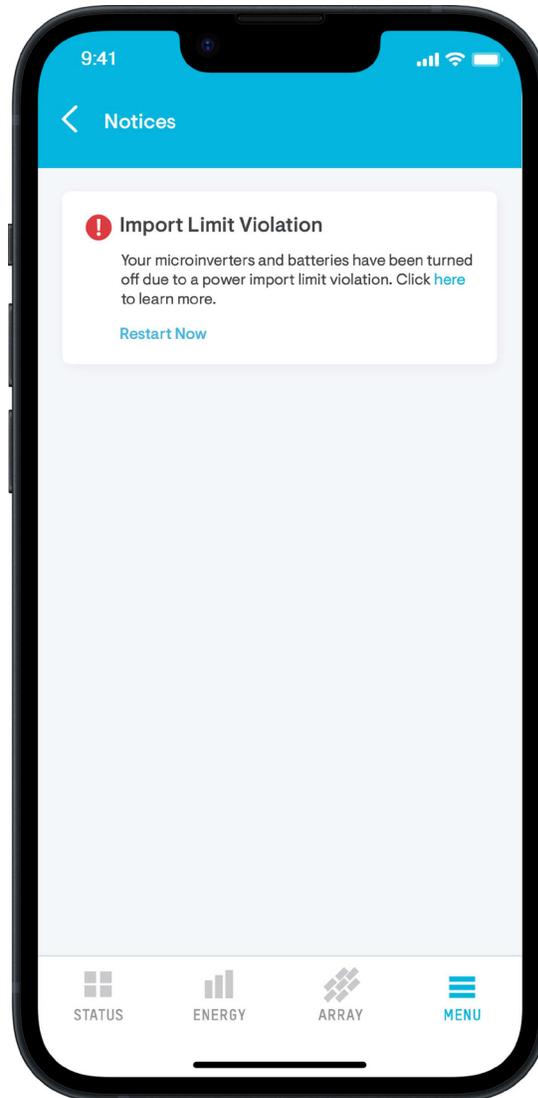
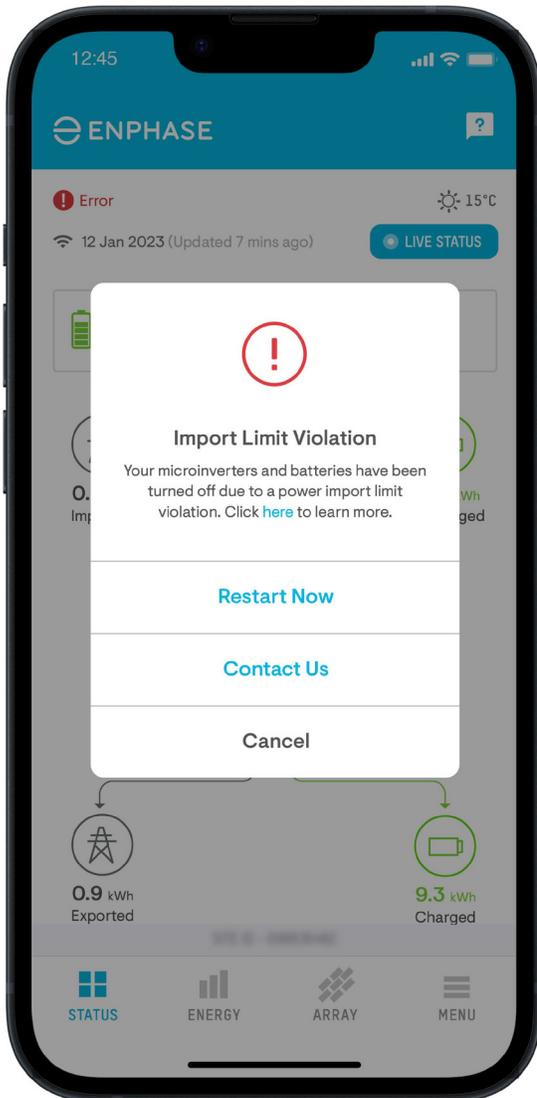
As a recommendation, check with your installer if the allowable export limit on site is appropriate to your system to avoid future grid export violations.

2. Grid import limit violation:

This is only applicable if you have a battery on the site and it is charging from the grid.

In this case when the site starts importing power from the grid to charge the battery beyond the allowed import limit set by the installer during system commissioning, the Enphase solar PV and battery system is required to fully shutdown and notify the homeowner and installer.

To self-recover the system from a grid import limit violation through the Enphase, click **Restart Now**.



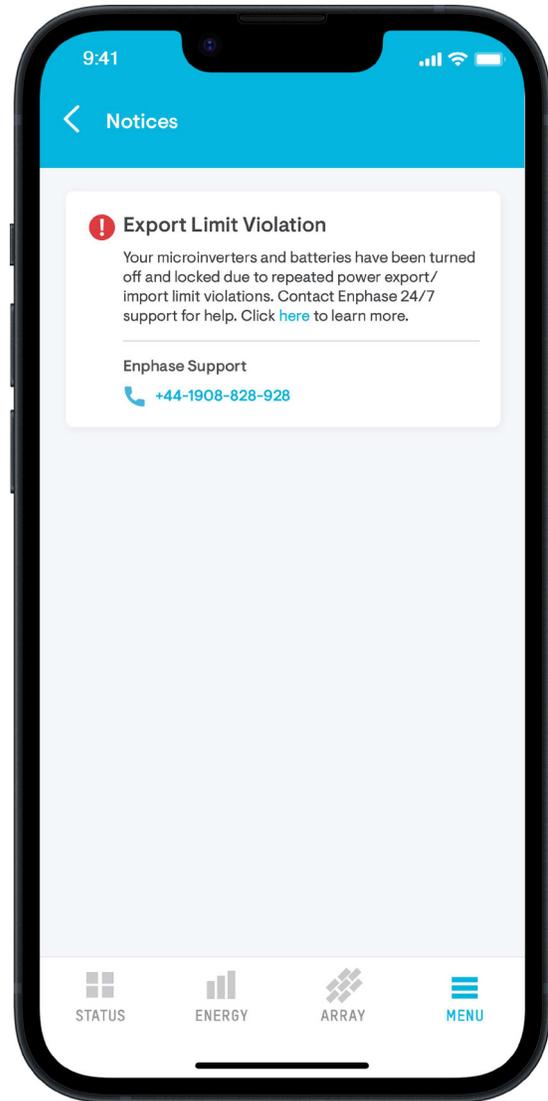
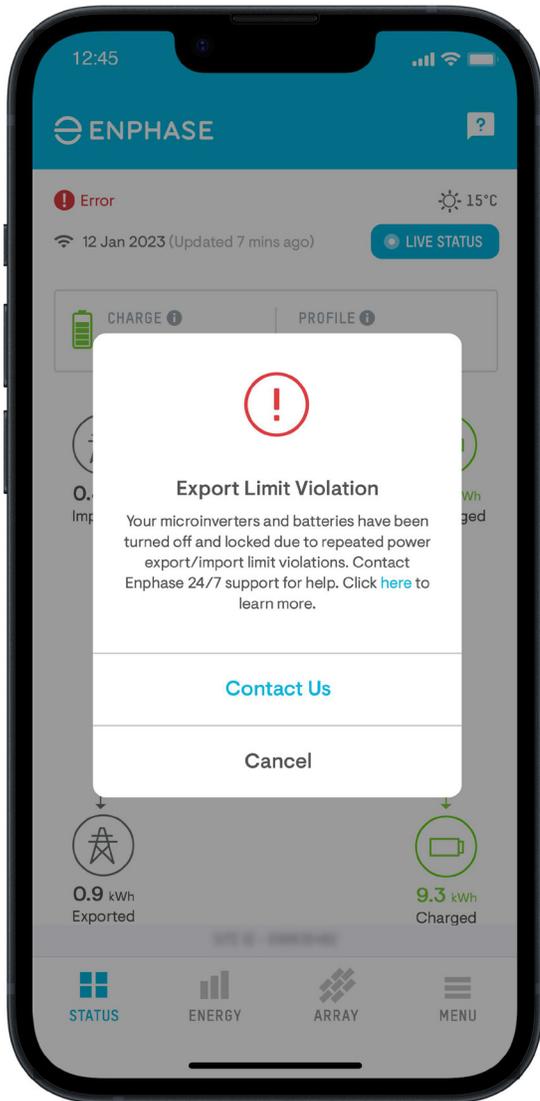
As recommendations to homeowner in the event of an grid import limit violation:

- Check with your installer if the allowable import limit on site is appropriate to your system to avoid future grid import violations
- Ensure that you turn-off significant loads such as an EV charging point or heat pumps before you restart the Enphase system to avoid any further overload of the cut-out fuse.
- Avoid turning-on high power devices all at the same time, this may result in an import limit violation.

System recovery after G100 related lockout

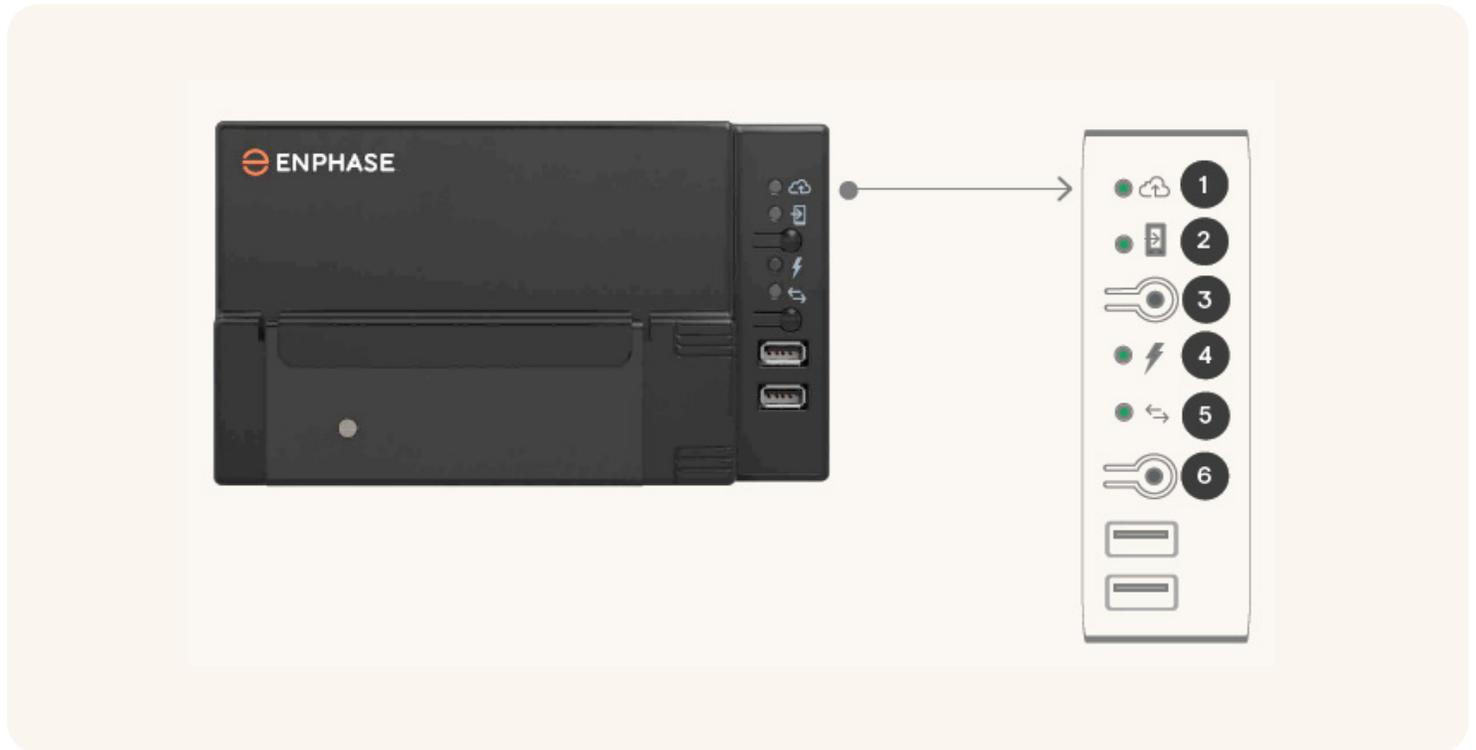
Self-recovery from grid import/grid export power violation mentioned above can only be done for a total of three times within a 30-day period by the homeowner.

If a total of four grid import or grid export power violations occur within a 30-day period, your system will get locked out and will require engagement from Enphase customer support to recover. Reach out to us at <https://enphase.com/en-gb/contact> to investigate such behavior on site before allowing system operation to resume.



IQ Gateway LEDs

You can see the IQ Gateway LEDs and buttons in the image shown below.



1 Network communications LED

Green when IQ Gateway is connected to the internet.

3 AP mode button

Press to enable IQ Gateway's AP mode for connecting with a mobile device.

5 Device communications LED

Green when devices are communicating with IQ Gateway.

2 Access point (AP) mode LED

Green when IQ Gateway's AP Mode is activated. Normally used only by the installer.

4 Power production LED

Green when IQ microinverters are producing power.

6 Device scan button

Press to start/stop a 15-minute scan for devices over the power line. Normally only used only by the installer

IQ Gateway communications troubleshooting

If the IQ Gateway has stopped reporting to the Enphase App, see this webpage for more information

<https://support.enphase.com/s/article/Reconnecting-your-Envoy-S-or-IQ-Envoy>.

If the IQ Gateway is not powered on or has failed, the IQ Battery 5P units will not discharge. If the IQ Gateway fails, contact your installer to submit a warranty claim for replacement (where applicable).

The Network communications LED (LED 1) in the IQ Gateway is lit solid green when connected to the internet. If the Enphase App shows that the IQ Gateway is not reporting, and the Network communications LED on the IQ Gateway lit red, then you may need to reconnect the IQ Gateway to the internet using Wi-Fi, hard-wired Ethernet, or a cellular network.

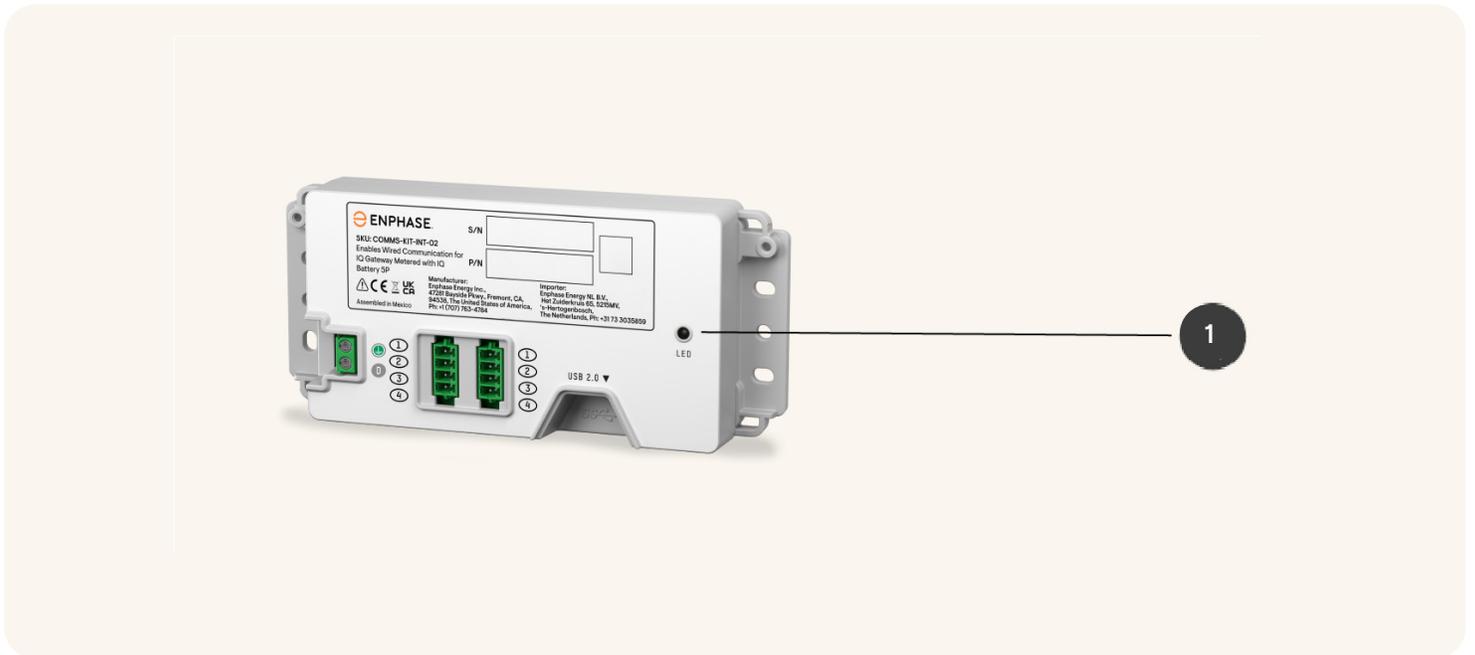
Check that the IQ Gateway ON. If not, switch it ON.

For more information on how to access monitoring when there is no connectivity, visit:

<https://support.enphase.com/s/article/Connecting-to-your-system-without-cell-connectivity>.

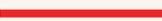
Communications Kit

You can see the Communications Kit LEDs in the image shown below.



1 Status LED

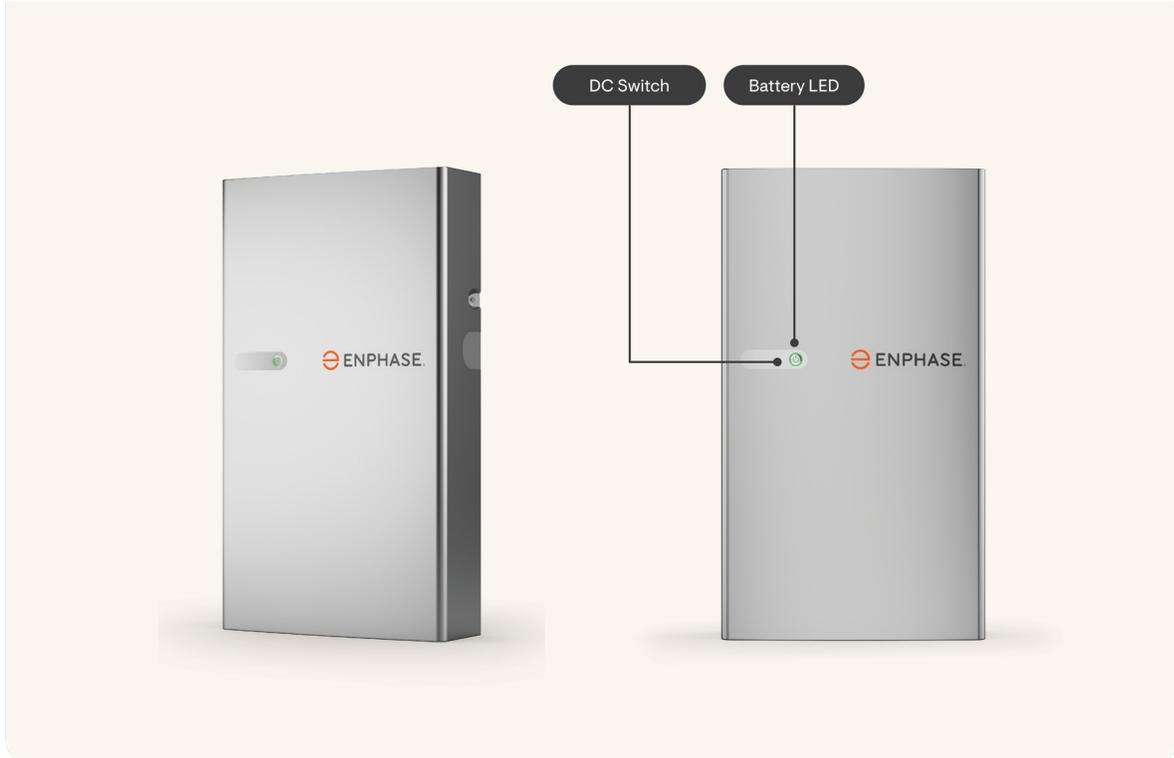
The LED on the Communication Kit indicates the connectivity status. The various **states** are as follows:

LED COLOUR	LED STATE	EVENT
	Red	ERROR (control or BUS error)
	Blinking green	Communications Kit firmware update
	Green	Communications Kit is operational
	Blue	No USB communication

Reset the IQ Battery 5P using DC switch

In the unlikely event that a battery does not automatically recover from a failure scenario, you can manually reset the battery to resume normal functioning.

To reset the battery, lightly press the DC switch button on the front of the battery. The battery LED state will change to a red triple flash pattern. Then switch off the AC circuit breaker for the battery in the electrical panel and wait 30 secs. After 30 secs turn on the AC circuit breaker again and wait for the battery to show a red triple flash pattern. Then press the DC switch once again to turn on the battery. The LED state should change to green/blue.



IQ Battery 5P LED status

You can check and record the colour of all the LEDs on the front of the IQ Battery 5P batteries using the following table. If the IQ Battery 5P lights are solid or pulsing green or blue, the batteries are operating normally.

LED COLOUR	STATE	DESCRIPTION
	Rapidly flashing yellow	Starting up/establishing communications.
	Solid yellow	Not operating due to high temperature. See Troubleshooting to restart the system.
	Soft pulse blue	Discharging
	Solid blue or green	Idle. Colour transitions from blue to green as the state of charge increases. Check the Enphase App/Enphase Installer Platform for charge status .
	Soft pulse green	Charging
	Red double flash	IQ Battery 5P is in an error state. Contact Enphase Support to troubleshoot the issue.
	Red triple flashes	DC control switch is OFF, and AC from external source is present.
	Off	DC control switch is OFF, and AC from external source is not present .

When to contact Enphase Support

If your system is not operating properly or has shutdown unexpectedly or system locked out due to G100 related violations contact Enphase Support for guidance at <https://enphase.com/en-gb/contact>.

Your support agent will ask for details on the status LEDs in your system. Be prepared to provide information about the IQ Battery 5P storage system LED and the IQ Gateway LED indicators (as shown on pages 18 to 20).

Safety information

Important safety instructions

This manual describes the safe use of the Enphase Energy System with the IQ Battery 5P units for a homeowner. See the [Safety Datasheet](#) for safe handling.

Safety and advisory symbols

To reduce the risk of electric shock and to ensure the safe installation and operation of the Enphase Energy System, the following safety symbols indicate dangerous conditions and important safety instructions.



DANGER!

This indicates a hazardous situation, which, if not avoided, will result in death or serious injury. Use extreme caution and follow instructions carefully.



WARNING!

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.



NOTE

This indicates information important for optimal system operation. Follow instructions carefully.

Safety instructions



A battery can present a risk of electrical shock, fire, or explosion from vented gases. Only qualified electricians should install, troubleshoot, or replace the Enphase Energy System equipment or wiring.



If the Enphase Storage equipment generates smoke, remove AC power from the Enphase Energy System, and turn the DC switch on the IQ Battery 5P units to the OFF position, following the instructions in the manual.



In case of fire, use a standard or carbon dioxide fire extinguisher or another appropriate extinguisher to put out the fire.



Do not dispose of the IQ Battery 5P units in a fire or by burning.



Do not allow or place flammable, sparking, or explosive items near the Enphase Storage system equipment.



Do not attempt to repair the Enphase Energy System equipment; it contains no user-serviceable parts. Do not open the IQ Battery 5P unit under the cover. Doing so will void the warranty. If the Enphase Energy System equipment fails, contact your solar installation professional or Enphase at <https://enphase.com/en-gb/contact>.



The IQ Battery 5P unit is designed for stationary installation only. It is not designed for mobile applications such as installation on vehicles and trailers and should not be used in such applications.



During use, when stored, or during transport, keep the IQ Battery 5P unit in an area that is well ventilated, where the ambient temperature is between -15°C to 55°C (5°F to 131°F).



Risk of electric shock. In areas where flooding is possible, install the Enphase Energy System equipment at a height that prevents water ingress.

-  Risk of equipment damage. During use, storage, transport, or installation, always keep the Enphase Energy System equipment in an upright (top side up) position.
-  Do not install or use the Enphase Energy System equipment if it has been damaged in any way.
-  Do not place beverages or liquid containers on top of the Enphase Energy System equipment. Do not immerse Enphase Energy System equipment in liquids or flooding.
-  Do not sit on, place objects on, or insert objects into the Enphase Energy System equipment.
-  Read this entire document before using Enphase Energy Systems.
-  Protection against lightning and resulting voltage surge must be in accordance with local standards.
-  Using unapproved attachments or accessories could result in damage or injury.
-  To ensure optimal reliability and to meet warranty requirements, Enphase Energy System equipment must be installed and/or stored according to the instructions in Enphase Energy System equipment guides.
-  The IQ Gateway must properly be fitted with Enphase Production CT and Consumption CTs.
-  An IQ Gateway and a Communications Kit 02 are required for the operation of the IQ Battery 5P units.

-  IQ Battery 5P is intended to operate with an internet connection. A Wi-Fi or Ethernet primary internet connection is required to ensure consistent connectivity. During use, storage, and transport, keep Enphase Storage products:
 - Properly ventilated
 - Away from heat, sparks, and direct sunlight
 - Away from excessive dust, corrosive and explosive gases, oil, and smoke
 - Away from direct exposure to gas exhaust, such as from motor vehicles.
 - Free of vibrations
 - Away from falling or moving objects, including motor vehicles
 - At an elevation of fewer than 2500 meters (8200 feet) above sea-level
 - In a location compliant with fire safety regulations (has a smoke detector)
 - In a location compliant with local building codes and standards

Revision history

REVISION	DATE	DESCRIPTION
USG-00025-1.0	November 2023	Initial release

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