

TROUBLESHOOTING

a LED overview

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

b Device detection issues

If the Device communications LED lights are 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 Metered 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 are 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 switchboard.
- If all of 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 seated in the IQ Cable connectors. Next, check that each module is providing the required startup voltage for the microinverter. A failing or undersized PV module 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 Mobile Connect modem and the Network communications LED remains off or lights solid red, see Troubleshooting in the *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 Metered Wi-Fi settings for the new Wireless Network Name (SSID) and password.

Manufacturer

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Importer

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SAFETY

Safety and Advisory Symbols

	DANGER: This indicates a hazardous situation, which if not avoided, will result in death or serious injury.
	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 particularly important for optimal system operation. Follow instructions carefully.

Safety Instructions

	DANGER: Risk of electric shock. Risk of fire. Do not attempt to repair the IQ Gateway Metered; it contains no user-serviceable parts. Tampering with or opening the IQ Gateway Metered will void the warranty. Warranty void if cover removed. If the IQ Gateway Metered fails, contact Enphase Customer Support for assistance (https://enphase.com/contact/support).
	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 energising the sensed circuit.
	DANGER: 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.
	DANGER: Risk of electric shock. Be aware that installation of this equipment includes risk of a electric shock. If you wire the IQ Gateway Metered at the sub-board, always de-energise the sub-board before beginning.
	DANGER: Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace the IQ Gateway Metered.
	DANGER: Risk of electric shock. Risk of fire. Do not wire unused terminals or terminal blocks on the IQ Gateway Metered.
	DANGER: Risk of electric shock. Risk of fire. Only qualified personnel should clean and service the IQ Gateway.
	WARNING: Before installing or using the IQ Gateway Metered, read all instructions and cautionary markings in the technical description and on the IQ Gateway Metered.
	WARNING: Risk of equipment damage. If installing the IQ Gateway Metered in an enclosure, choose an area for installation where the ambient temperature does not exceed 46°C.
	NOTE: 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.
	NOTE: Perform all electrical installations in accordance with all national and local electrical codes.
	NOTE: To ensure optimal reliability and to meet warranty requirements, the IQ Gateway Metered must be installed according to the instructions in this guide.

Note for third-party products

Any third-party manufacturer or importer product(s) used to install or commission Enphase product(s) shall comply with the applicable EU Directive(s) and requirements in the EEA (European Economic Area). It is the responsibility of the installer to confirm that all such products are labeled correctly and have the required compliant support-ing documentation.

Compliance with EU Directives

This product complies with the following EU Directives and can be used in the European Union without any restrictions.

- Electro Magnetic Compatibility (EMC) directive 2014/30/EU
- Low Voltage Directive (LVD) 2014/35/EU
- Restriction of Hazardous Substances (RoHS) 2011/65/EU

RED Directive Compliance

Hereby, Enphase Energy Inc. declares that the radio equipment type IQ Gateway Metered follows Directive 2014/53/EU.

Compliance with Security Requirements

The IQ Gateway complies with UK Product Security and Telecommunications Infrastructure (Security Requirements for Relevant Connectable Products) Regulations, 2023.

The full text of the EU Declaration of Conformity (DoC) is available at

<https://enphase.com/en-gb/installers/resources/documentation>.

Wireless module details

Module type: WG7837V0 Wi-Fi & Bluetooth Module 13.4x13.3 mm, LGA-100

Frequency band: 2.4 GHz and 5.0 GHz

Max power transmitted: 20 dBm

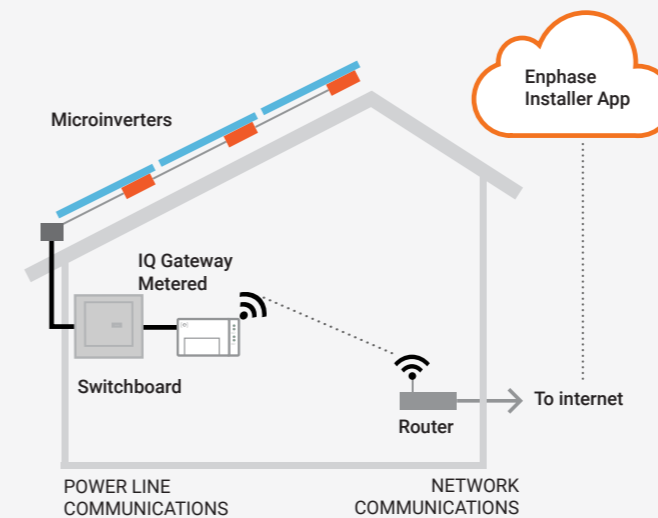
QUICK INSTALL GUIDE - EN (Model ENV-S-EM-230)



Installing the IQ Gateway Metered

To install the IQ Gateway Metered with integrated meter, read and follow all warnings and instructions in this guide and the *IQ Gateway Metered Installation and Operation Manual* at <https://enphase.com/contact/support>. Safety warnings are listed at the back of this guide.

How it works



IQ Gateway Metered display and controls

Track system installation progress with the Enphase Installer App mobile app. The LEDs on the IQ Gateway Metered 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 the Enphase Installer App. For a legend of all LED states, see *Troubleshooting*.

Network communications LED
Green when IQ Gateway Metered is connected to Enphase Installer App.

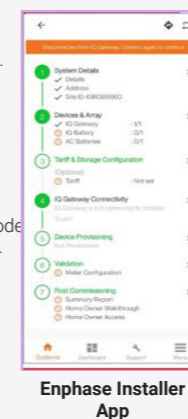
AP mode LED
Green when IQ Gateway's AP Wi-Fi network is available.

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 Metered.

Device scan button
Press to start/stop 15-minute scan for devices over the power line.



PREPARATION

- Download the latest version of the Enphase Installer App and open it to log in to your Enphase Account. With this app, you can connect to the IQ Gateway Metered to track the system installation progress. To download, go to <https://enphase.com/installers/apps> or scan the QR code at the right.

 Android
  iOS
- Check the box for the following items:
 - IQ Gateway Metered
 - Two split-core current transformers (CTs) for production and consumption metering
 - DIN rail for mounting
 - *Quick Install Guide* (this document)
- Check if there is enough space in the switchboard to install CTs. Do not install the CTs in a panel where they exceed 75% of the wiring space of any cross-sectional area within the panel.
- Install the IQ Gateway Metered in an IP54-rated 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 the IQ Gateway Metered indoors.
- If you are installing the IQ Gateway Metered in a multi-phase application, make sure you have the following items:
 - Additional CTs (CT-100-SPLIT-ROW) for multi-phase installations. One CT for each phase monitored, for both production and consumption.
 - The IQ Gateway box contains a label to identify the line on which a CT is installed. Stick a small label denoting the line on a CT, and wrap the corresponding bigger label on the end of the lead wire after stripping, and install the CT on the appropriate line.
 - A phase coupler. If installing on a three-phase site, install a phase coupler on the load side of the overcurrent protection device. See the *Phase couplers for three-phase Enphase systems technical brief* at <https://enphase.com/en-gb/installers/resources/documentation>. Consult Enphase Support for compatible devices.
- Decide how to connect the IQ Gateway Metered to the internet: Choose to use Wi-Fi, a Mobile Connect modem, or Ethernet.
- Make sure you have the following optional items if needed:
 - Mobile Connect modem (CELLMODEM-02)
 - Ethernet cable [802.3, Cat5E or Cat6, unshielded twisted pair (UTP)]. Do not use shielded twisted pair (STP) cable.
- Install the PV system as directed by the installation manual.
- If an Enphase PV system is or will be installed at the site, 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 did with the microinverters (and Enphase AC Batteries, if installed), peel the removable label from the bottom of the IQ Gateway Metered and affix it to the paper installation map.
 - Always keep a copy of the installation map for your records.

NOTE: If needed, you can find an installation map with any *Enphase Microinverter Quick Install Guide*.

NOTE: You can install RCD onsite for fault protection. Follow the local regulations on installing RCD onsite with IQ Gateway and IQ Series Microinverters.



Enphase Support: <https://enphase.com/contact/support>

INSTALLATION


1 Choose a location for the IQ Gateway Metered

- Install the IQ Gateway Metered near the switchboard and consider the length of the CT leads (4 meters) when choosing the location. If you need to extend the leads (up to 148 meters), refer to the *IQ Gateway Metered Installation and Operation Manual* at <https://enphase.com/en-gb/installers/resources/documentation>.
- Install the IQ Gateway Metered in a protected dry space. If outdoors, install the IQ Gateway Metered in an IP54-rated, or better, enclosure with conduit attachment. Use an appropriately rated enclosure if hard wiring the IQ Gateway Metered indoors.
NOTE: Metallic enclosures may impair Wi-Fi signal strength.
- Mount the IQ Gateway Metered horizontally using the included DIN rail.

2 Wire the IQ Gateway Metered for power and metering

For this step, refer to the **Wiring Instruction Sheet** for your region.

3 Energize the IQ Gateway Metered

- Close the terminal block door, and secure it with the screw.
- Turn on the circuit feeding the IQ Gateway Metered.
- All four LEDs flash red during boot up (approximately 2 minutes). When boot up is complete, the Device communications LED  lights solid red, indicating that devices are not yet detected.

4 Installing accessories with the IQ Gateway

The IQ Gateway has two USB ports that can be used to install the following compatible accessories.

- Mobile Connect: Delivers an easy and reliable cellular network for communication between the IQ Gateway and the Enphase Cloud.
- Communications Kit 1: Wireless communication between the IQ Gateway and IQ Battery 3T/10T.
- Communications Kit 2 (COMMS-KIT-INT-02): Wired communication between the IQ Gateway and IQ Battery 5P.

A) Installing the Mobile Connect

Purchase the Mobile Connect separately for a reliable cellular network for communication between the IQ Gateway and the Enphase Cloud. This device should be installed with IQ Gateway in the same IP54 (or better-rated) enclosure. To install the Mobile Connect, plug in the USB cable provided with it in one of the two USB ports available on the IQ Gateway. The IQ Gateway powers the Mobile Connect and does not need an external power source.

B) Installing the Communications Kit 1/Communications Kit 2 INT

Purchase the Communications Kit 1 separately for wireless communication between the IQ Gateway and IQ Battery 3T/10T. To install the Communications Kit 1, plug in the USB cable of the Communications Kit 1 in one of the two USB ports available on the IQ Gateway.

Purchase the Communications Kit 2 INT (available in select countries) for wired communication between the IQ Gateway and IQ Battery 5P. Connect the USB cable of the Communications Kit 2 in one of the two USB ports of the IQ Gateway and connect the IQ Battery with Communications Kit 2 using an Enphase-recommended CTRL cable. For more details, see the IQ Battery 5P quick install guide.

Communications Kit 1/Communications Kit 2 INT should be installed with IQ Gateway in the same IP54 (or better-rated) enclosure.

5 Launch the Enphase Installer App and start system activation

- Launch the Enphase Installer App. To create an activation for a new system, tap the Plus button on the bottom right corner of the screen.
- Tap **System Details** to enter the required information.
- 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 the system details will appear as complete.

6 Adding devices and array to the system

This step is used to enter the unique serial numbers of all devices present onsite. It is recommended that you enter the serial number by scanning the bar code/QR code.

- Tap **Devices and Array** on the home page.
- Add the total number of devices to be installed in your system.
- Scan device serial numbers through bar code or QR code in the respective device sections.

- After scanning the microinverters, you can use the Array Builder to assign your scanned microinverters to an array or build an array manually.

This step can be completed post-commissioning as well.

7 Setting the tariff details (optional)

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

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

8 IQ Gateway connectivity

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

- Tap **IQ Gateway Connectivity** on the Enphase Installer App home page.
- If the "IQ Gateway" and the "Enphase Installer App" (or the phone icon) are not connected, follow these steps:
 - On the IQ Gateway, 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.
 - Return to the Enphase Installer App IQ Gateway Connectivity page and connect.
- If the "IQ Gateway" and "Enphase Cloud" (or the cloud icon) are not connected, follow these steps:
 - The IQ Gateway can connect to the Enphase Cloud through Wi-Fi, Ethernet, or a cellular network.
 - If Wi-Fi is selected, input the username and password for the home/office Wi-Fi.
 - If connecting using Ethernet, plug the cable into the IQ Gateway.

9 Provisioning the devices

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

- If a green check-mark displays between the IQ Gateway and the Enphase Installer App, tap **START PROVISIONING DEVICES**. The Provisioning Devices screen displays the steps 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**.

10 Verify meter configuration

The production meter can be configured as follows:

- Tap **Meter Configuration** to start configuring the consumption and production meter.
- Subsequently, tap **Production Meter** to start configuring the production meters. A pop-up message appears asking you to follow the meter wizard to verify your CT configuration. Select **Yes** to proceed.
- Tap **Enable production meter** to finish the configuration of the production meter.

The consumption meter can be configured as follows:

- Tap **Meter Configuration** to start configuring consumption and production meter.
- Subsequently, tap **Consumption Meter** to start configuring production meters. A pop-up message appears asking you to follow the meter wizard to verify your CT configuration. Select **Yes** to proceed.
- Tap **Enable consumption meter** to finish the configuration of the consumption meter.

11 Send summary report and complete homeowner walkthrough

This step is used to download the summary report of all the devices installed and report to IQ Gateway. You can share this report using email, text, or airdrop. It contains details of each provisioned device and the commissioned status of the system.

- Tap **Summary** on the Enphase Installer App home page. The system report is displayed on the screen, which consists of a list of devices, their serial numbers, their last reports, and information about the grid profile applied to the devices.
- Tap **SHARE** on the top right corner to share the report.
- Open the 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.

WIRING INSTRUCTION SHEET FOR EUROPE

The IQ Gateway Metered uses terminal blocks for power and metering connections. Wire these terminal blocks as described in this section.

You will need to install one split-core CT per monitored phase for production metering and one split-core CT per monitored phase for consumption metering. Use a protected route in conduit (raceway) for the CT wires to the IQ Gateway Metered. If you need to extend the leads (up to 148 meters), refer to the *IQ Gateway Metered Installation and Operation Manual* at <https://enphase.com/en-gb/installers/resources/documentation>.

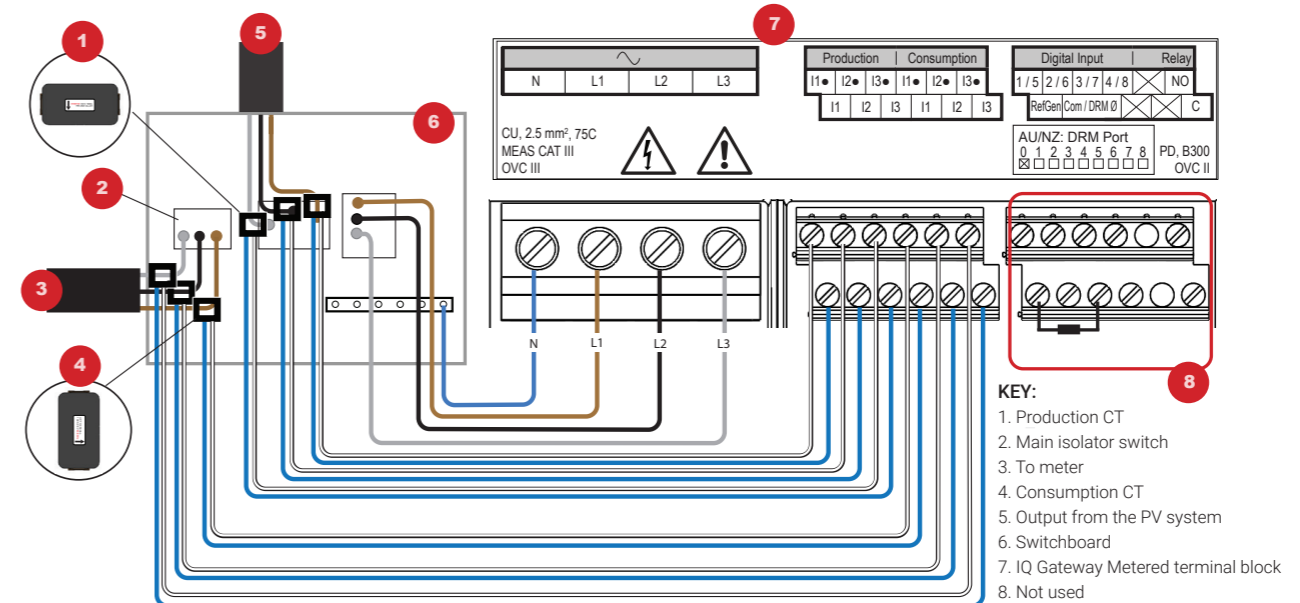


DANGER! Risk of electric shock. Always de-energise circuits before wiring for power and CTs.

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 energising the sensed circuit.

- Before running the CT wires through conduit, use coloured tape to mark each of the CTs and the free ends of its wires, marking each with a different colour. You can run multiple CT wires through a single conduit.
- Wire the IQ Gateway Metered for power
 - Depending on the number of phases you will wire, use a one-, two-, or three-pole (20 A maximum) circuit breaker for the supply wiring.
 - Make sure the supply wiring is 2.5 mm² copper-rated at 75°C or better.
 - Locate the screw on the terminal block door, and loosen it with a screwdriver to unlock the door and flip it open.
 - Connect Line 1 to L1, Line 2 to L2, Line 3 to L3, and Neutral to N, as required.
 - Tighten all connections to 0.56 N m.
- Install the Production CTs on phases as required:
 - Locate the arrow on the CT label.
 - To monitor production on Line 1:**
 - Connect the white wire to the "I1-" terminal and the blue wire to the "I1" terminal.
 - Clamp the CT on active Line 1 of the solar production circuit with the arrow pointing toward the load (away from the solar array).
 - To monitor production on Line 2:**
 - Connect the white wire to the "I2-" terminal and the blue wire to the "I2" terminal.

WIRING DIAGRAM FOR EUROPE



Revision history

REVISION	DATE	DESCRIPTION
140-00246-09	July 2024	Updated the "Installing accessories with the IQ Gateway" section.
140-00246-08	April 2024	Added the "Installing accessories with the IQ Gateway" step.
140-00246-06	June 2023	Updated the document for product names and editorial changes.

Previous releases.

- Clamp the CT on active Line 2 of the solar production circuit with the arrow pointing towards the load (away from the solar array).
- To monitor production on Line 3:**
 - Connect the white wire to the "I3-" terminal and the blue wire to the "I3" terminal.
 - Clamp the CT on active Line 3 of the solar production circuit with the arrow pointing towards the load (away from the solar array).
- Tighten all connections to 0.56 N m.

NOTE: Because of variance in switchboard design and main power feed, there may not always be enough space to install CTs.

NOTE: It is important to match CT and voltage sense phases. Make sure to consistently identify all the AC lines at three points: the main switchboard feed, the IQ Gateway, and the solar production circuit breaker. Wire colours may not always consistently identify Lines 1, 2 and 3. If in doubt, use a multimeter to check.

D) Install the Consumption CTs in phases as required:

- Locate the arrow on the CT label.
- Make sure that the AC mains wire(s) are de-energised until you have secured the CT wires in the terminal blocks.
NOTE: Run only active conductors of the same phase through each CT. Each CT can monitor multiple active conductors.
- To monitor consumption on Line 1:**
 - For the first CT, connect the white wire to "I1-" and the blue wire to "I1".
 - Clamp the CT on the main supply Line 1 (active). When the Consumption CT is on Line 1 (active) conductor, the arrow must point towards the load (away from the grid).
- To monitor consumption on Line 2:**
 - For the second CT, connect the white wire to "I2-" and the blue wire to "I2".
 - Clamp the CT on the main supply Line 2 (active). When the Consumption CT is on Line 2 (active) conductor, the arrow must point towards the load (away from the grid).
- To monitor consumption on Line 3:**
 - For the third CT, connect the white wire to "I3-" and the blue wire to "I3".
 - Clamp the CT on the main supply Line 3 (active). When the Consumption CT is on Line 3 (active) conductor, the arrow must point towards the load (away from the grid).
- Tighten all connections to 0.56 N m.