� ENPHASE.

Installing the **Enphase Communications Kit 2 INT**

The Enphase Communications Kit 2 INT (COMMS-KIT-INT-02) enables wired communication between IQ Gateway Metered and IQ Battery 5P using Control (CTRL) cables.

Read and follow all warnings and instructions in this guide. Do not proceed if you do not fully understand any of the concepts, terminology, or hazards outlined in these instructions. These instructions are not meant to be a comprehensive guide to installing an IQ Battery 5P system. Use the IQ Battery 5P Quick Install Guide along with this document to plan your installation. All installations must comply with local codes and standards.
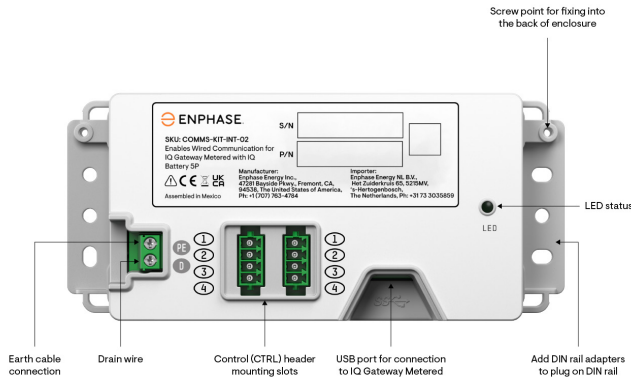

Figure 1: Front view of the Communications Kit 2 INT

CONTENTS

The Enphase Communications Kit 2 INT enables the IQ Gateway Metered to communicate with the IQ Battery 5P. The device has a USB Type-C port, two control cable ports, and a drain port.

The Communications Kit 2 INT includes the following accessories:

- One control header with termination resistor
- One control header without a resistor
- One USB Type-C to USB Type-A cable
- Zip-ties for cable management
- DIN rail adapters and screws
- Two spare control headers

The USB port connects the Communications Kit 2 INT to the IQ Gateway. This enables communication between the device and the IQ Gateway.

The control headers must be installed on the control ports on the Communications Kit 2 INT.

INSTALLATION

> ⚠ **DANGER!** Risk of electric shock. All sources to equipment being serviced must be disconnected external to the device. Storage circuits must ALWAYS be isolated via a circuit breaker or isolator switch before working on any part of the system.

1 Preparation

A) Install the Communications Kit 2 INT in an IP3X or higher-rated enclosure with adequate space for cable routing. It is recommended to install both the IQ Gateway and the Communications Kit 2 INT in the same enclosure.

B) The enclosure should have access to an Earth terminal bar.

C) Based on your installation design, identify if the Communications Kit 2 INT is a terminating node or a non-terminating node in the daisy chain of devices connected via a control cable on the site. The installation procedure varies accordingly, as described later in the document.

D) Make sure the system is powered off before you begin the installation.

E) Ensure that you have these tools and materials for the installation:

   a. Torque terminal screwdrivers and wire stripper

   b. Control cables

F) Install the wired control headers on the unit. Refer to section 2, Wiring the Communications Kit 2 INT.

G) Connect the cable from the Earth bar to the PE port on the device.

H) Connect the device to an IQ Gateway Metered with the USB cable provided.

I) Switch on the IQ Gateway Metered.

J) The Communications Kit 2 INT can be installed in two ways. The box ships with DIN rail adapters that can be connected to the device to mount it on a DIN rail. The device can also be screwed into the back wall of the enclosure using the screw points provided on extreme ends on either side of the unit.

Torque details of the control cable are given below:

CABLE TYPE	WIRE SIZE	TORQUE
Control cables	0.34 mm²	0.2 N m
Ground cables	0.75 mm²	0.2 N m

140-00332-02

## 2 | Wiring the Communications Kit 2 INT

Strip the cable insulation as per the following image. Keep the terminating resistor only on the devices that are on either end of the control communication bus, and remove the resistor from all other devices.
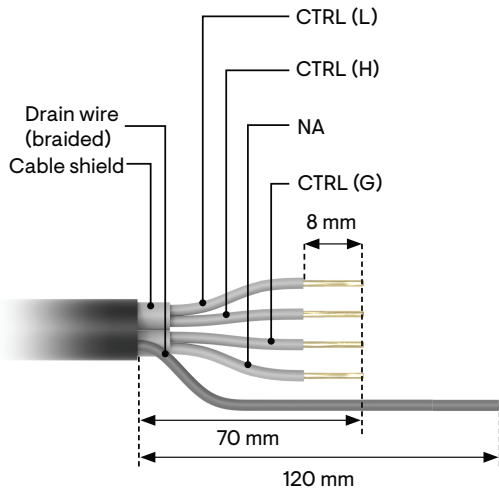
The tested and supported control cable make and model is Belcom (manufacturer part number 4302P2254).

✓ **NOTE:** Use a wire stripper to strip the jacket of the control communication cable.

- To ensure proper control (CTRL) cable connection with IQ Batteries, follow the guidelines outlined below while connecting the cable to the headers.

⚠ **WARNING!** Failure to follow wiring guidance will result in the system being unable to detect devices, leading to commissioning and operation failures.
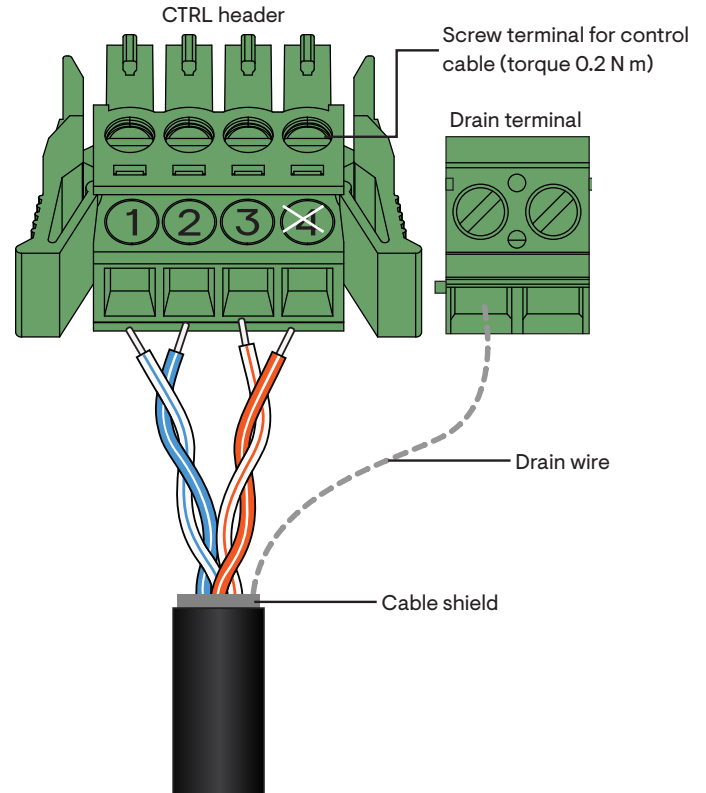
- Ensure that both ends of the CTRL cable twisted pair conductors are inserted into the header, as shown above.

- **Connect the drain wire to the drain terminal only at one end of a CTRL cable.** Do not connect drain wires at both ends of a CTRL cable. Follow the guidance based on section 3, Control (CTRL) wiring between system components.

The following table provides the mapping of the control communication signals to the wire colors for the recommended Belcom cables:

CTRL HEADER NUMBERS	CTRL SIGNALS	WIRE DESIGNATION
Screw terminal 1	CTRL L	White with blue stripe
Screw terminal 2	CTRL H	Blue with white stripe
Screw terminal 3	CTRL G	White with orange stripe
Screw terminal 4	NA	Orange with white stripe

3 | Control (CTRL) wiring between system components

Control wiring guidance for installing IQ Battery 5P(s) with a Communications Kit 2 INT:

Refer to the following wiring sequences to understand the position of the header with termination resistor, wiring order, and drain wire termination location.

✓ **NOTE: The** total length of CTRL wiring across the system should not exceed 100 meters to ensure the system operates as per specifications.

✓ **NOTE:** Ensure the following guidelines are followed to avoid failures during system commissioning:

- One header with termination resistor should be installed on the component located at each end of the control network.

- The drain wire should only be terminated on one end of control wiring between system components.

- It is recommended that the drain wire be terminated at the component from which the control wiring for the section is initiated.

Following are the two common wiring sequences:

Sequence 1: Communications Kit 2 INT – IQ Battery 5P(s)
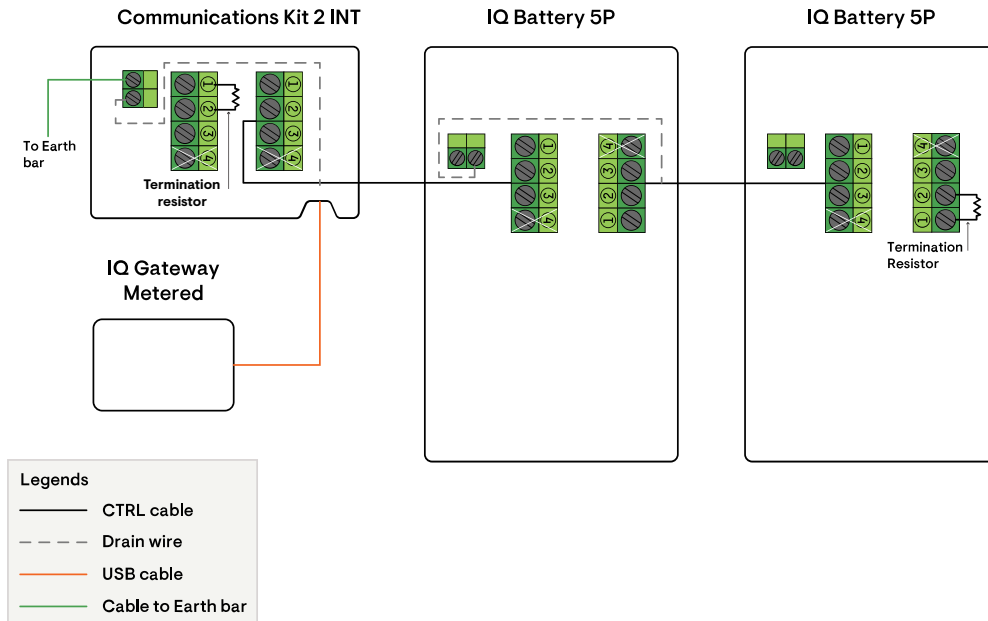
Sequence 2: IQ Battery 5P – Communications Kit 2 INT – IQ Battery 5P
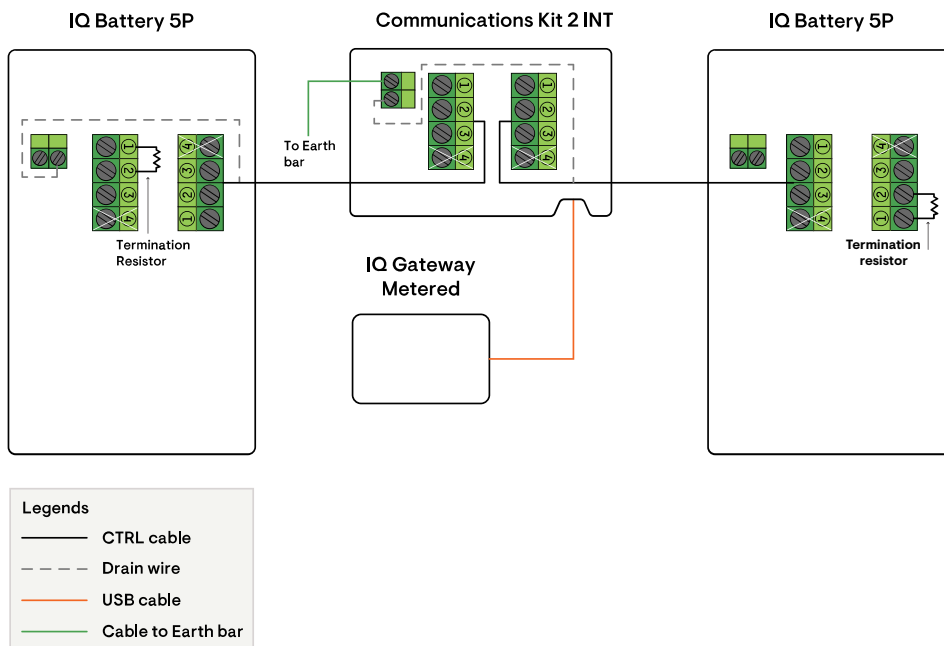
The following table provides termination resistor locations for the above sequences:

CONTROL WIRING SEQUENCE	TERMINATION RESISTOR LOCATION
Communications Kit 2 INT – IQ Battery 5P(s)	• Communications Kit 2 INT • Last IQ Battery 5P in the control bus
IQ Battery 5P(s) – Communications Kit 2 INT – IQ Battery 5P(s)	• The two IQ Battery 5P's at each end of the control bus

4 Connecting to IQ Gateway software

The Communications Kit 2 INT needs IQ Gateway software version 8.2 or higher to work with other Enphase Energy System components.

A) Install the Enphase Installer App mobile application from iOS App store or Android play store and log in to your Enphase account. With this app, you can connect to the IQ Gateway to track system installation progress. You may also download the app from the Enphase website at https://enphase.com/en-gb/installers/apps.

B) Download the latest version of IQ Gateway software. To do so, go to the **Settings** tab in the Enphase Installer App and tap the **Update Now** button under IQ Gateway Software.

C) After updating the IQ Gateway to version 8.2 or higher, scan the devices to ensure they are identified as component of the Enphase Energy System.

D) Verify the devices are connected by navigating to:
Devices > IQ Battery > <serial number>

The LED on the Communications Kit 2 INT indicates the connectivity status.

The various LED states are as follows:

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

SAFETY

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS
Follow these important instructions during the installation and maintenance of the Communications Kit 2 INT.

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.
⚠	**WARNING:** For installation and use in a restricted access area by a qualified and instructed personnel.
✓	**NOTE:** This indicates information particularly important for optimal system operation. Follow instructions carefully.

Safety instructions

⚡	**DANGER:** Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or add parts to the IQ Gateway.
⚡	**DANGER:** Risk of electric shock. Risk of fire. Ensure that all wiring is correct and that none of the wires are pinched or damaged.
✓	**NOTE:** Do not attempt to repair the Communications Kit 2 INT. It contains no user-serviceable parts. If the equipment fails, contact Enphase Support for assistance or replacement equipment.
✓	**NOTE:** Using unapproved attachments or accessories could result in damage or injury.

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 European Economic Area (EEA). It is the responsibility of the installer to confirm that all such products are labelled correctly and have the required compliant supporting 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 Communications Kit 2 INT follows Directive 2014/53/EU.

The full text of the EU declaration of conformity (DoC) is available at: https://enphase.com/en-gb/installers/resources/documentation.

Manufacturer:
Enphase Energy Inc.,
47281 Bayside Pkwy., Fremont, CA,
94538, The United States of America, Ph: +1 (707) 763-4784

Importer:
Enphase Energy NL B.V.,
Het Zuiderkruis 65, 5215MV,
's-Hertogenbosch, The Netherlands, Ph: +31 73 3035859

Environmental protection
ELECTRONIC DEVICE: DO NOT THROW AWAY. Waste electrical products should not be disposed of with household waste. Proper disposal of batteries is required. Refer to your local codes for disposal requirements.

Revision history

REVISION	DATE	DESCRIPTION
140-00332-02	September 2023	Safety instructions updated
140-00332-01	July 2023	Initial release