GE Inverter Integration Guide

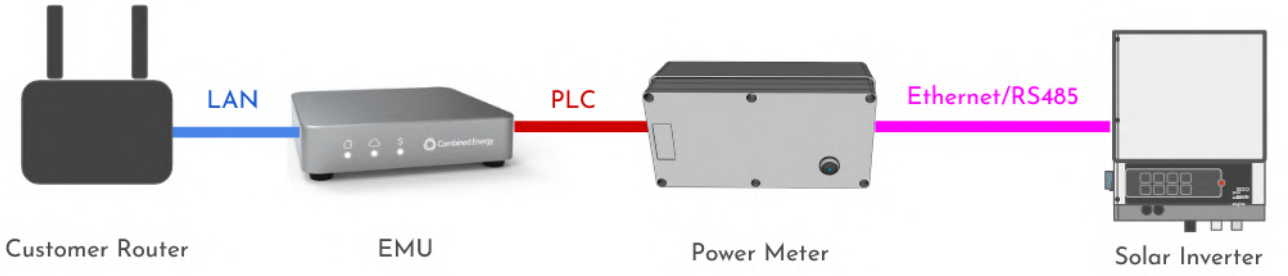
V1.1 - September 2023

Read this first

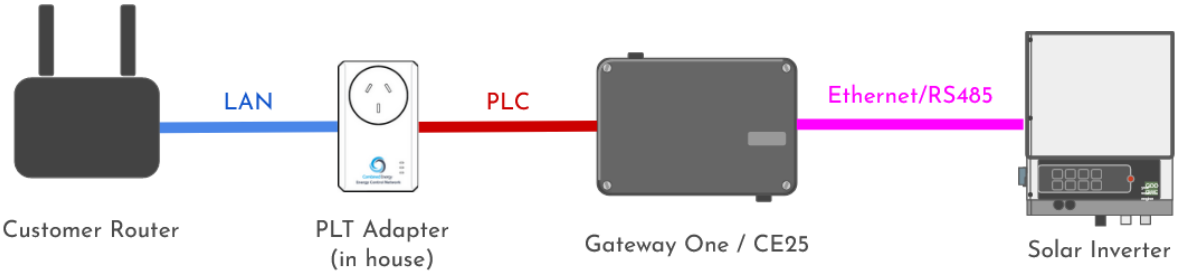
How are GE Inverters integrated with the CET system?

GE Inverters are integrated with the CET system by adding a data connection between the CET device (Gateway One / Power Meter / etc) and the Inverter.

Example of new system (EMU + Power Meter)



Example of old system (Gateway One)



When is a data connection to an Inverter required?

1. When the CET system is responsible for export limiting
2. When there is a battery connected to the Inverter

Is a GE meter also required?

No - the CET system performs all of the functions that would otherwise be done by the GE meter.

Selecting a data connection type

1. **Ethernet (hybrid inverters only)**
   Connecting an inverter using Ethernet provides the required Modbus data connection for the CET system to control the inverter, and also provides the Inverter with an Internet connection without needing to separately configure Wi-Fi.

   The LAN KIT accessory (PN TBC) is required for this option:

   Please see the Inverter Ethernet Connection section of this document for details.

2. **RS485**
   An RS485 connection provides a Modbus data connection for the CET system. This option does **not** also give the inverter a connection to the Internet.

   The RS485 connection details depend on the inverter model - please refer to the Inverter RS485 Connection section of the document for details.

The CET device should be powered from the backup circuit

If a hybrid inverter with battery is being installed, the CET device (Gateway / Power Meter / etc) should be powered from the backup circuit so that it will continue to operate during blackouts.

If a single-phase backup is being provided at a two-phase or three-phase site, the backed up circuit should be connected to the **Phase A** terminal of the CET device.

Contact CET Support to test the data connection

When the data connection to the inverter is ready to test, contact CET by logging in to the *onSite* web app at **http://onsite.combined.energy/** and using the **Request Support** button in the menu.

Steps to Connect to Inverter

Inverter Ethernet Connection

These steps apply to all **GE hybrid inverter** models:

1. Connect the LAN KIT to the USB port on the bottom face of the inverter:

2. Prepare a **double-insulated** Ethernet cable with a standard T568A or T568B pinout at both ends.

3. Connect the Ethernet cable to the LAN KIT

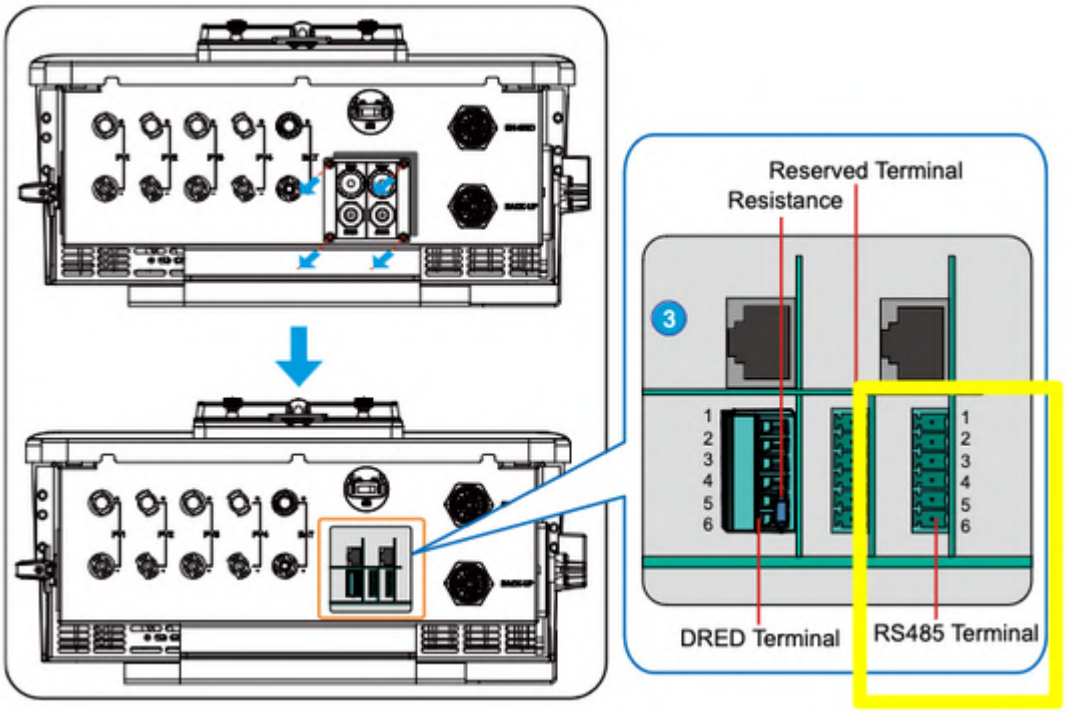
4. Connect the Ethernet cable to the CET device in accordance with the specific steps for the device in the Inverter Ethernet Connection section of this document.

Inverter RS485 Connection

Please refer to the steps for the specific inverter series being used below. In all cases, the data cable used should be double-insulated and have twisted-pair cores (e.g. Clipsal 5005C305B).

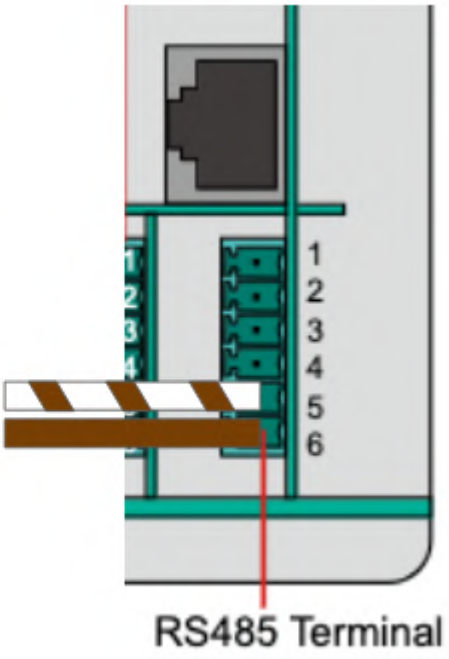
GEHx-1U-10

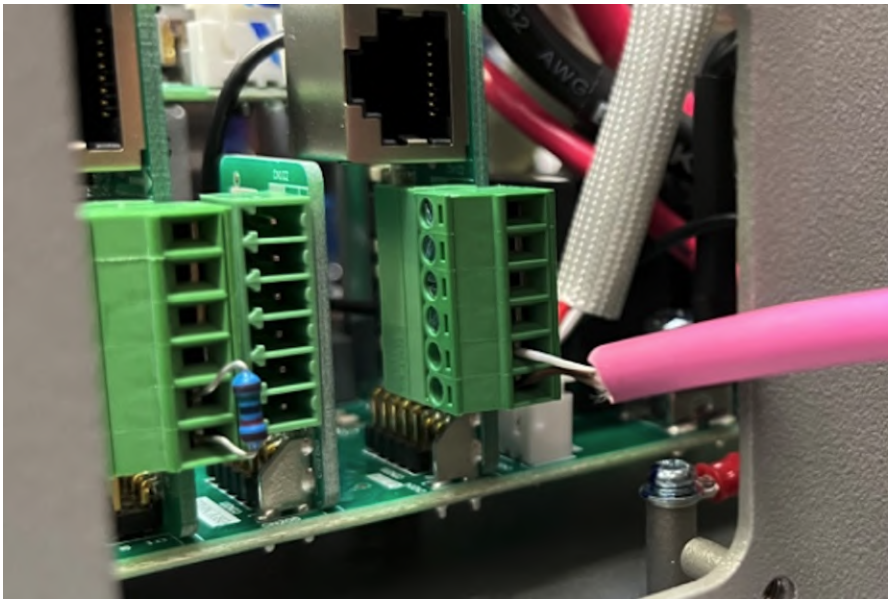
1. Remove the IO port cover to access the RS485 terminal block:



2. Connect the RS485 wires to pin 5 (brown-white) and pin 6 (brown) of the green block terminal supplied with the inverter as shown below:

NO.	RS485 port definition
1	RS485_B2 [2]
2	RS485_A2 [2]
3	LG_EN- [3]
4	LG_EN+ [3]
5	RS485_B1 [4]
6	RS485_A1 [4]





3. Terminate the CET device end of the cable in accordance with the Steps to Connect to CET Device section of this document.

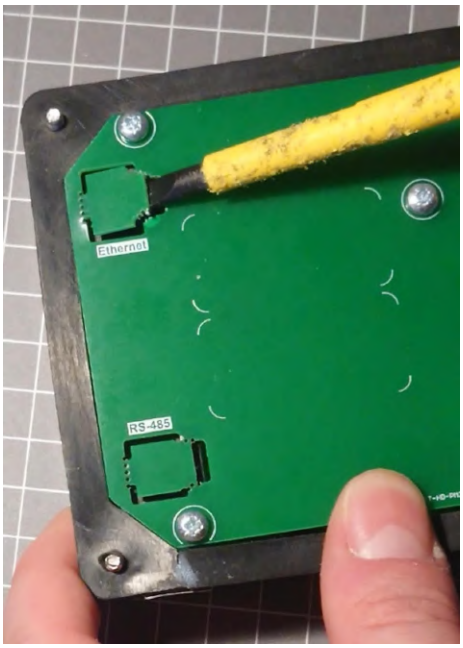
Steps to Connect to CET Device

Power Meter (EMU system)

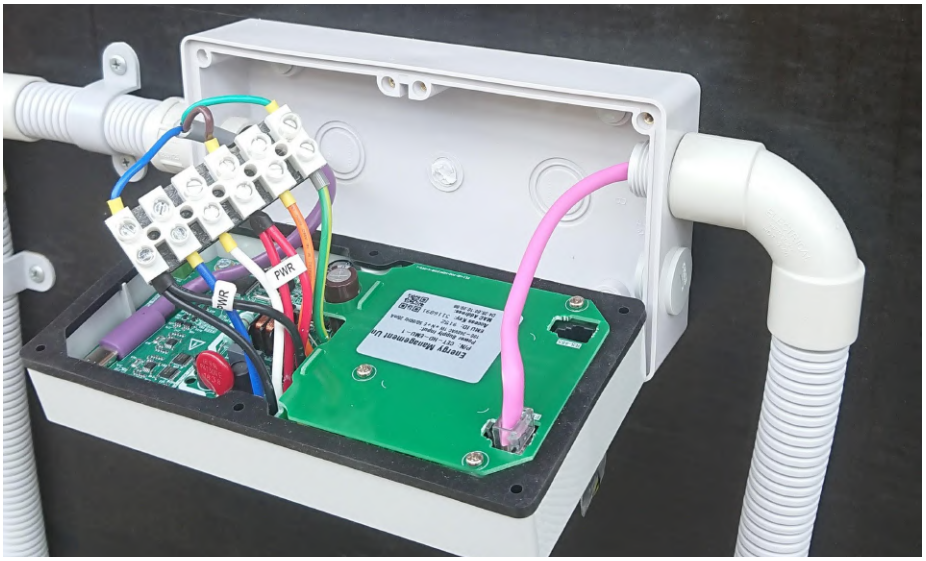
Please follow the instructions for your selected connection type: **Ethernet** or **RS485**

Ethernet

1. Using a flat blade screwdriver, carefully remove the breakout tab covering the RJ45 "Ethernet" port:

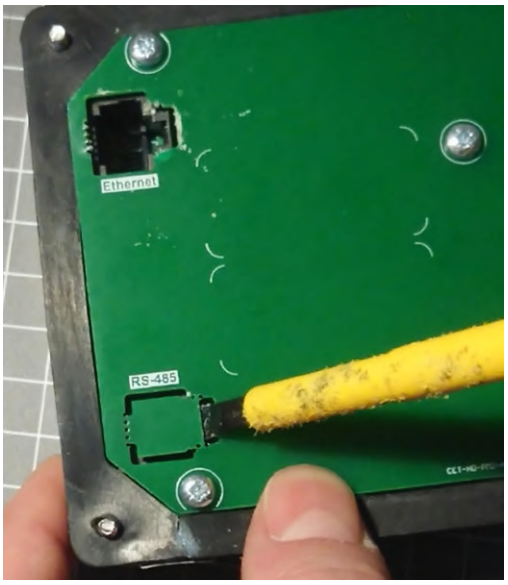


2. Connect the remote equipment to the RJ45 port using a double insulated Ethernet cable (e.g. Clipsal 5005C305B).



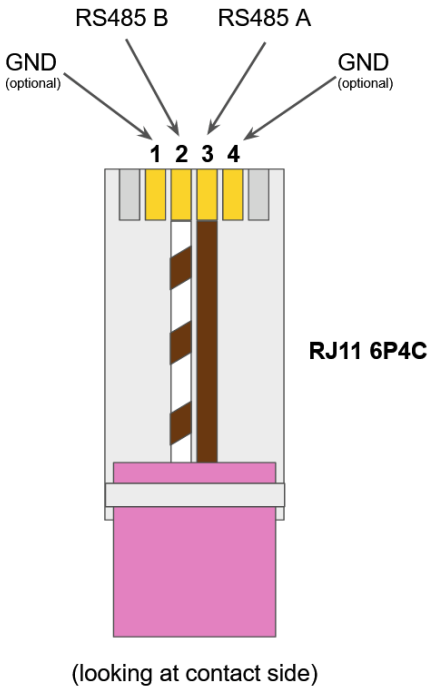
RS485

1. Using a flat blade screwdriver, carefully lever out the breakout tab covering the RJ11 "RS-485" port:



RS485 Port on CET-HD-PM2-1 Power Meter

2. Connect the remote equipment to the RJ11 6P4C port using a double insulated data cable (e.g. Clipsal 5005C305B). The pinout for the RS485 cable is shown below:

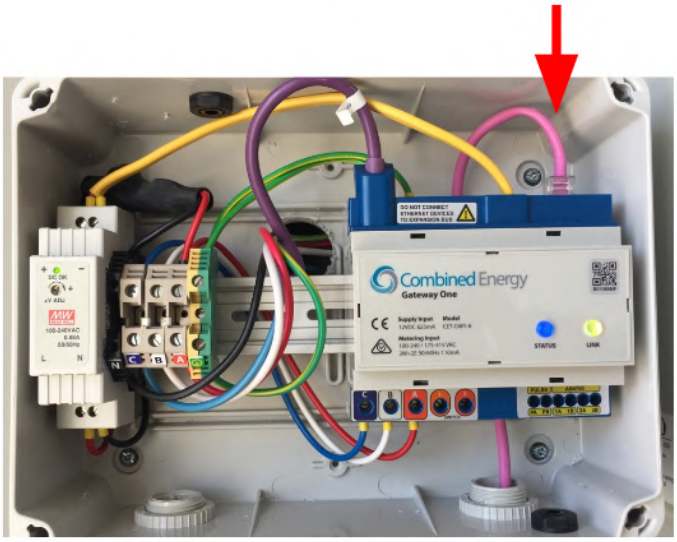


An RJ11 6P4C crimp connector is included in the standard set of accessories in the Power Meter box. An RJ12 connector would also be compatible using pins 3 & 4.

Gateway One

Ethernet

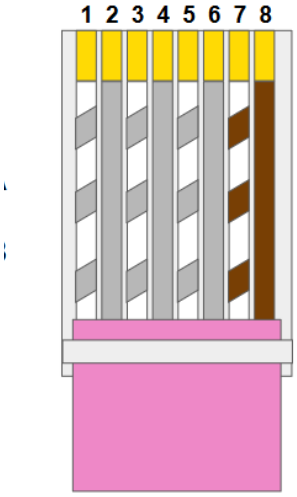
Terminate the **double-insulated** Ethernet cable with a standard T568A or T568B pinout (to match the inverter end), and plug the cable into the Ethernet port on the **far right-hand side** of the Gateway:



RS485

1. Terminate the double-insulated data cable with an RJ45 using the pinout shown below. Only the **brown** and **brown-white** wires are required for RS485:

Gateway Expansion Bus



2. Plug the RJ45 connector into either of the two expansion bus ports on the top of the Gateway One: