Sungrow Inverter Integration Guide

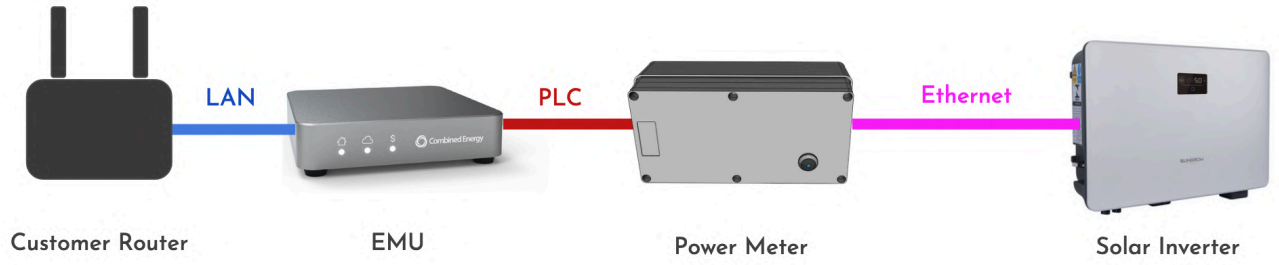
V2.0 - September 2024

Read this first

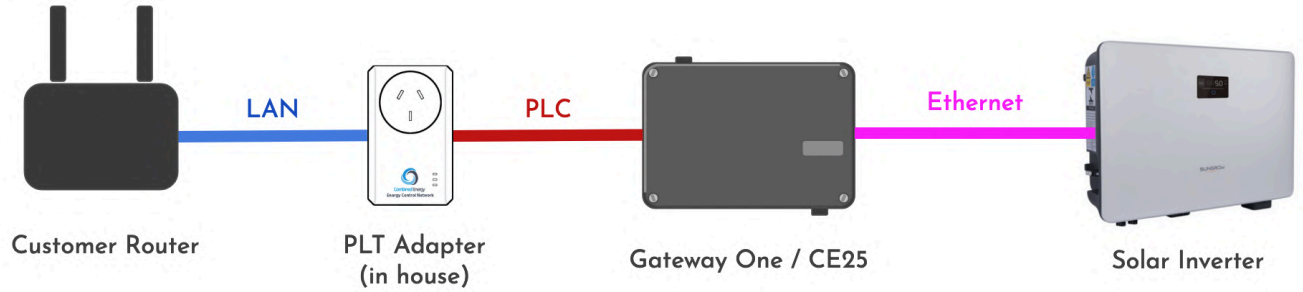
How are Sungrow Inverters integrated with the CET system?

Sungrow Inverters are integrated with the CET system by adding an Ethernet connection between the CET device (Power Meter / Gateway One / etc) and the Inverter. For some inverter models a **WiNet-S or WiNet-S2 Communication Module is required** to add Ethernet to 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** or **CSIP-AUS** compliance
2. When there is a **battery** connected to the Inverter

Is a Sungrow meter also required?

Yes. Unlike other inverter brands, Sungrow inverters require a Sungrow power meter to function even when under full HEMS control.

Data connection

The Ethernet connection provides a Modbus data connection for the CET system and also provides the inverter with a connection to the Internet.

Some Sungrow inverters models have built-in Ethernet and can be connected without an adapter. Most Sungrow inverter models require a **WiNet-S or WiNet-S2 Communication Module** to add Ethernet.

Battery Configuration

Please refer to the Sungrow documentation for the latest instructions on configuring a battery. Once the battery has been properly configured, the CET system will be able to use the data connection to control the battery.

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

Sungrow inverters over Ethernet use Modbus TCP on port 502. A **double-insulated Ethernet cable** with a standard T568A or T568B pinout at both ends will be required.

The images shown here are for reference only. The actual product received may differ if modified by Sungrow.

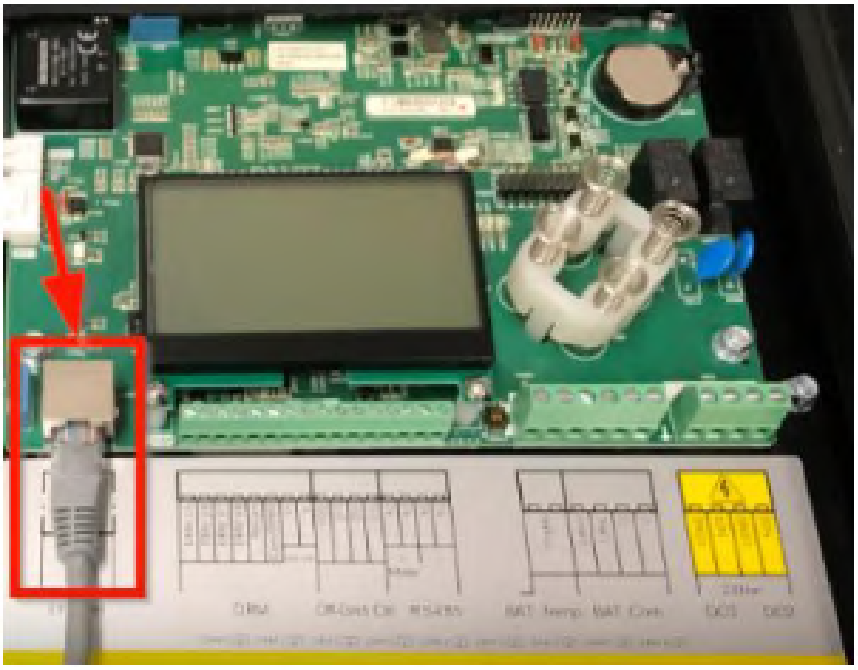
SH-K Series

E.g. SH5K

The Ethernet connector on the SH-K is located under the cover.

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

2. Connect the Ethernet cable to the SH-K inverter as shown below:



3. Connect the Ethernet cable to the CET device in accordance with the specific steps for the device in the Steps to Connect to CET Device section of this document.

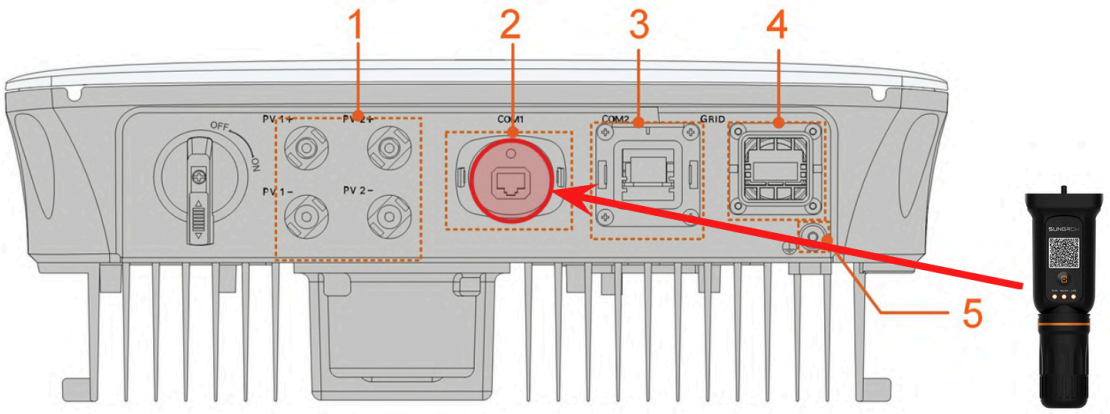
SG-K Series

Not supported - this inverter series does not have a supported Ethernet adapter from Sungrow and is therefore not supported by CET HEMS.

SG-RS Series

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

2. Connect the WiNet-S or WiNet-S2 Communication Module to the **COM1** port of the inverter (labelled “2” below). This will enable Ethernet communications. Instructions on how to connect the Ethernet cable to the module can be found in the WiNet-S/S2 Ethernet Connection section of this document.

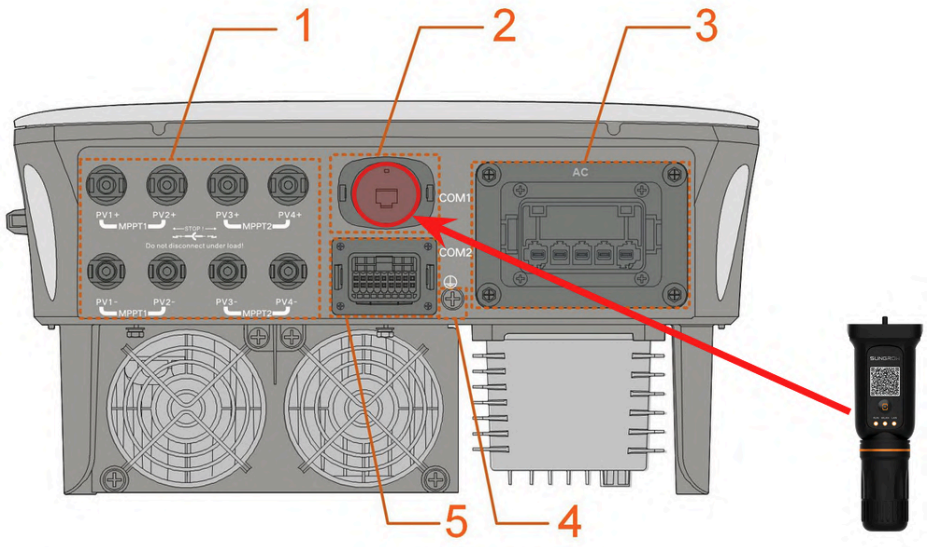


3. Connect the Ethernet cable to the CET device in accordance with the specific steps for the device in the Steps to Connect to CET Device section of this document.

SG-RT Series

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

2. Connect the WiNet-S or WiNet-S2 Communication Module to the **COM1** port of the inverter (labelled “2” below). This will enable Ethernet communications. Instructions on how to connect the Ethernet cable to the module can be found in the WiNet-S/S2 Ethernet Connection section of this document.

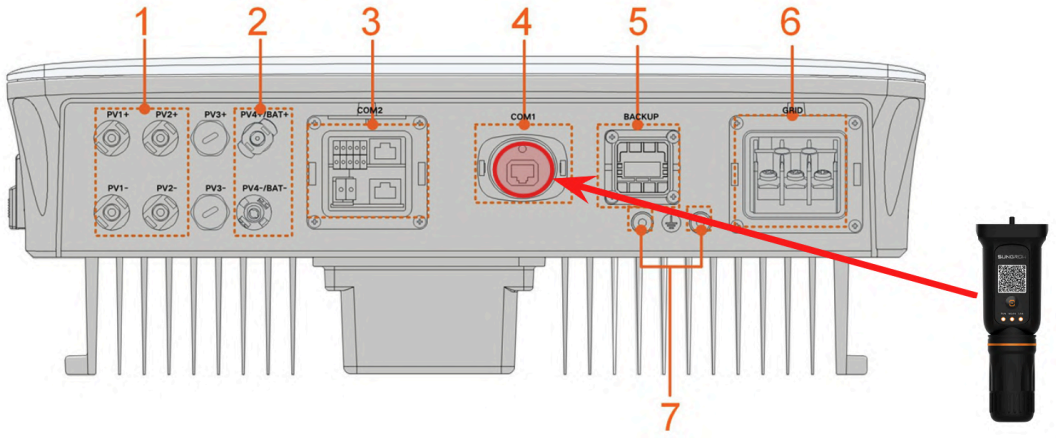


3. Connect the Ethernet cable to the CET device in accordance with the specific steps for the device in the Steps to Connect to CET Device section of this document.

SH-RS Series

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

2. Connect the WiNet-S or WiNet-S2 Communication Module to the **COM1** port of the inverter (labelled “4” below). This will enable Ethernet communications. Instructions on how to connect the Ethernet cable to the module can be found in the WiNet-S/S2 Ethernet Connection section of this document.



3. Connect the Ethernet cable to the CET device in accordance with the specific steps for the device in the Steps to Connect to CET Device section of this document.

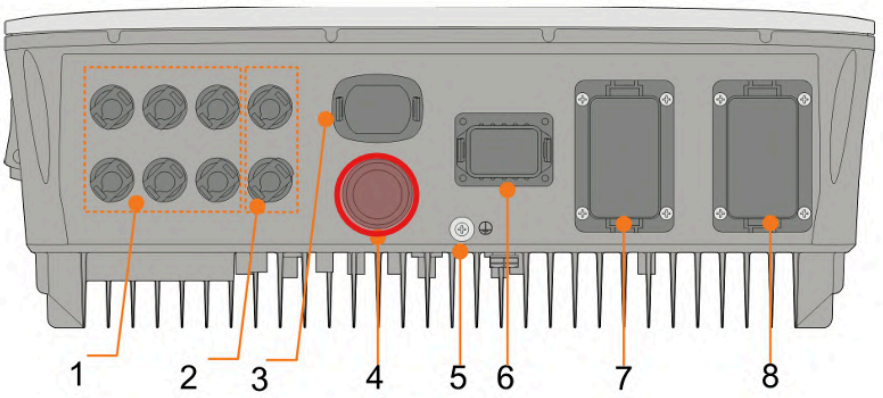
SH-RT Series

Use the **LAN Terminal** in the inverter (labelled “4” below) to connect the Ethernet cable.

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

2. Unscrew the waterproof lid from the LAN terminal and insert the Ethernet connector.

3. Ensure cables are fastened firmly and tighten the swivel nut.



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

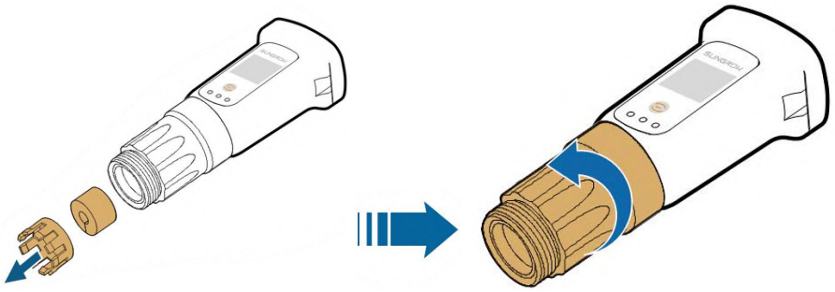
WiNet-S/S2 Ethernet Connection

The WiNet-S module supports Ethernet communication and WLAN communication. It is not recommended to use both communication methods at the same time. The EMU will provide an Internet connection to the inverter if the inverter is connected via Ethernet, so a Wi-Fi connection is not required.

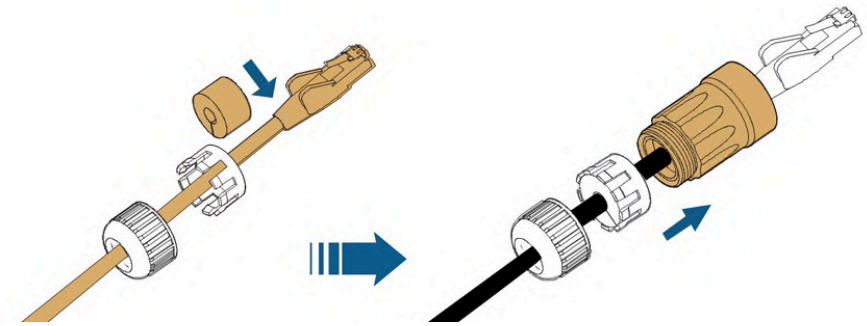
Further information can be found in the User Manual for the respective inverter.

1. Prepare the double-insulated Ethernet cable with a standard T568A or T568B pinout.

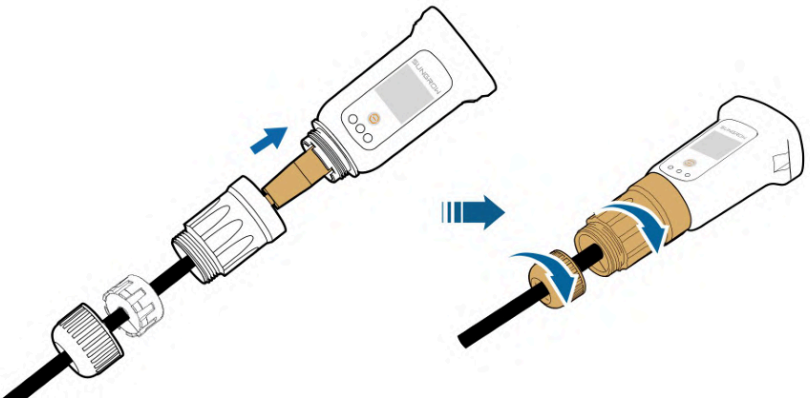
2. Unscrew the swivel nut, take out the inner sealing ring and unscrew the housing from the communication module.



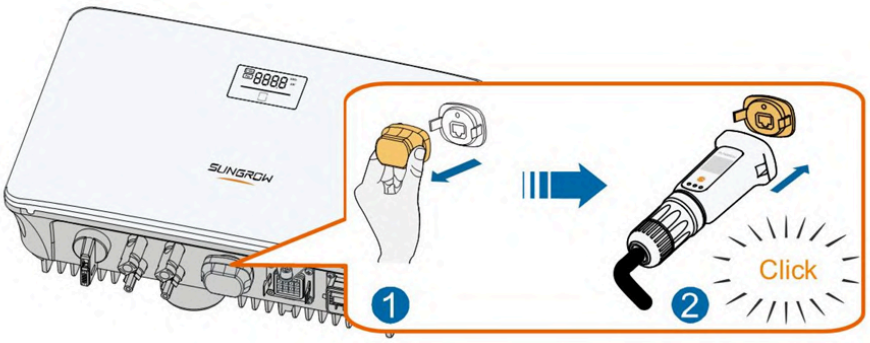
3. Thread the network cable through the swivel nut and gasket, route the cable into the opening of the sealing and insert the cable through the housing.



4. Insert the RJ45 plug into the front plug connector until there is an audible click and attach the housing, gasket and swivel nut.



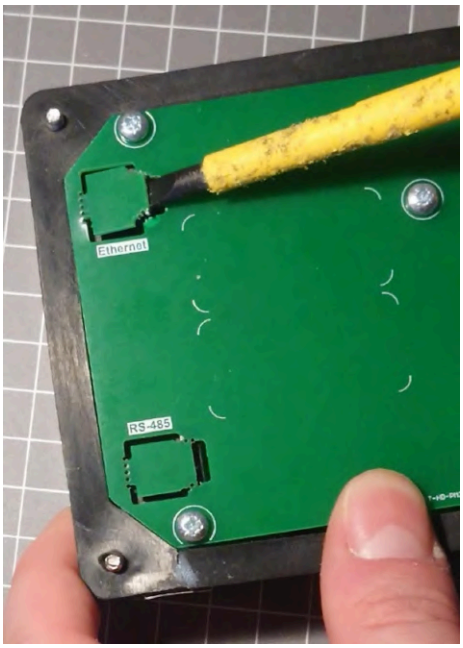
5. Remove the waterproof lid from the COM1 terminal and install WiNet-S/S2.



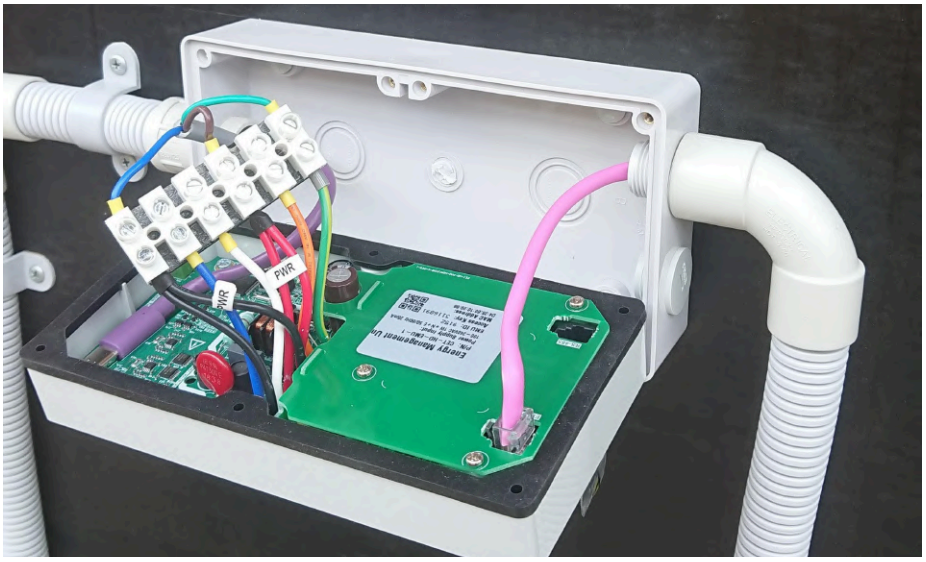
Steps to Connect to CET Device

Power Meter (EMU system)

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



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



Gateway One

Terminate the **double-insulated** Ethernet cable and plug the cable into the Ethernet port on the **far right-hand side** of the Gateway: