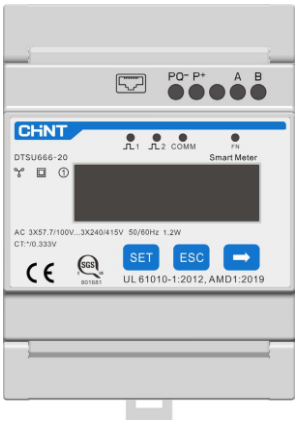
Installing a Sungrow DTSU666-20

Disclaimer

The material in this document has been prepared by Sungrow Australia Group Pty. Ltd. ABN 76 168 258 679 and is intended as a guideline to assist solar installers for troubleshooting. It is not a statement or advice on any of the Electrical or Solar Industry standards or guidelines. Please observe all OH&S regulations when working on Sungrow equipment.

Overview:

In the new ADA series of Single-Phase Hybrid inverters, Sungrow will now include a DTSU666-20 CT meter.



This will also include 2 x 100A CT's, 2 x 120 Ohm termination resistors, and a plastic cover.

Installation:

The meter is 4 modules wide, and requires a Voltage supply as a reference voltage.

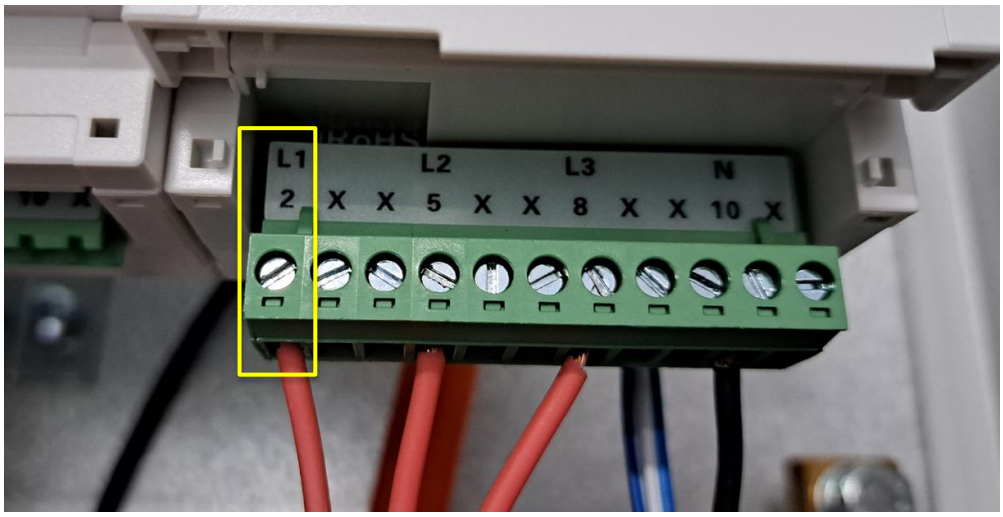
If the system is Single-Phase, use Phase A.

The meter supports Two-Phase as long as the phases are 120 degrees apart (i.e. two of Three phases).

On a three-Phase system, connect all the voltage inputs.

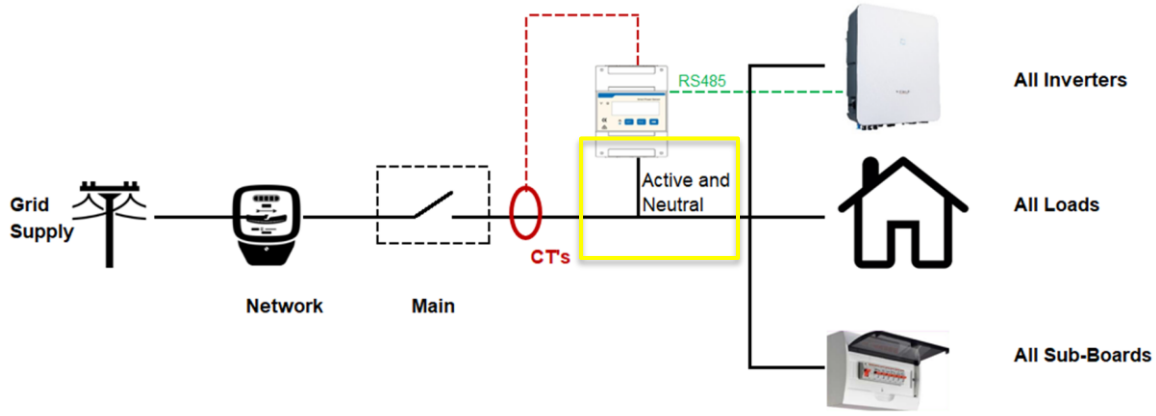
Voltage connection:

The Power connector block is on the bottom of the meter, and clearly marked L1, L2,L3 and N. L1 is Phase A.



The power supply must come from the consumer side of the main switch, and before all loads and inverters.

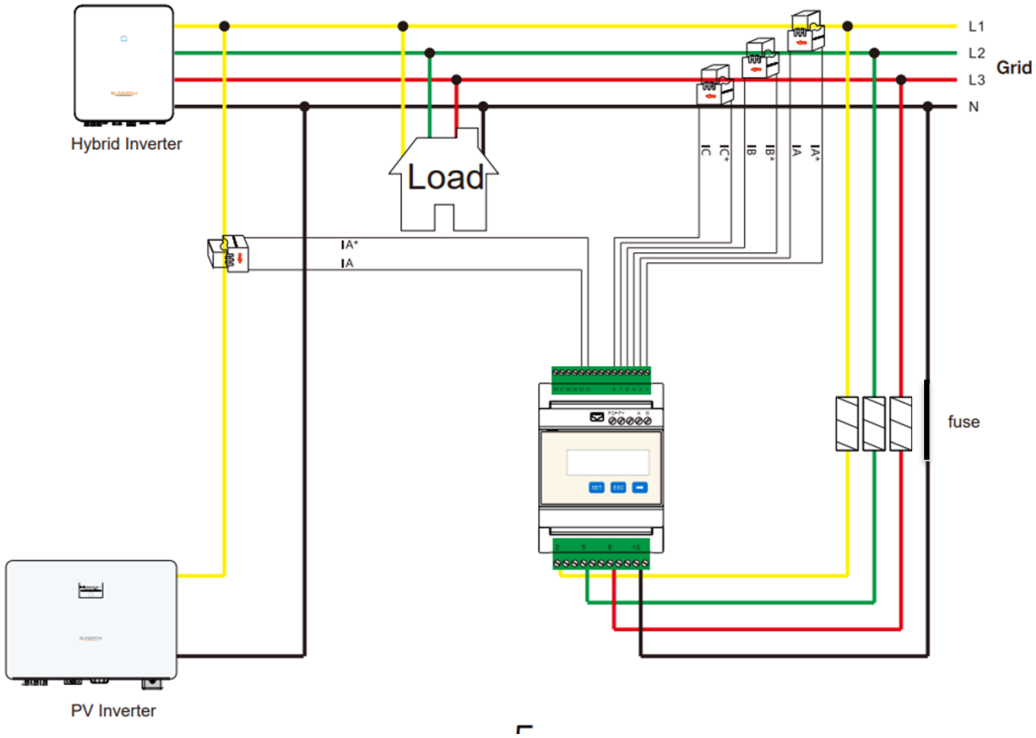
Connect the Neutral to the Neutral bar.



Current Transformers:

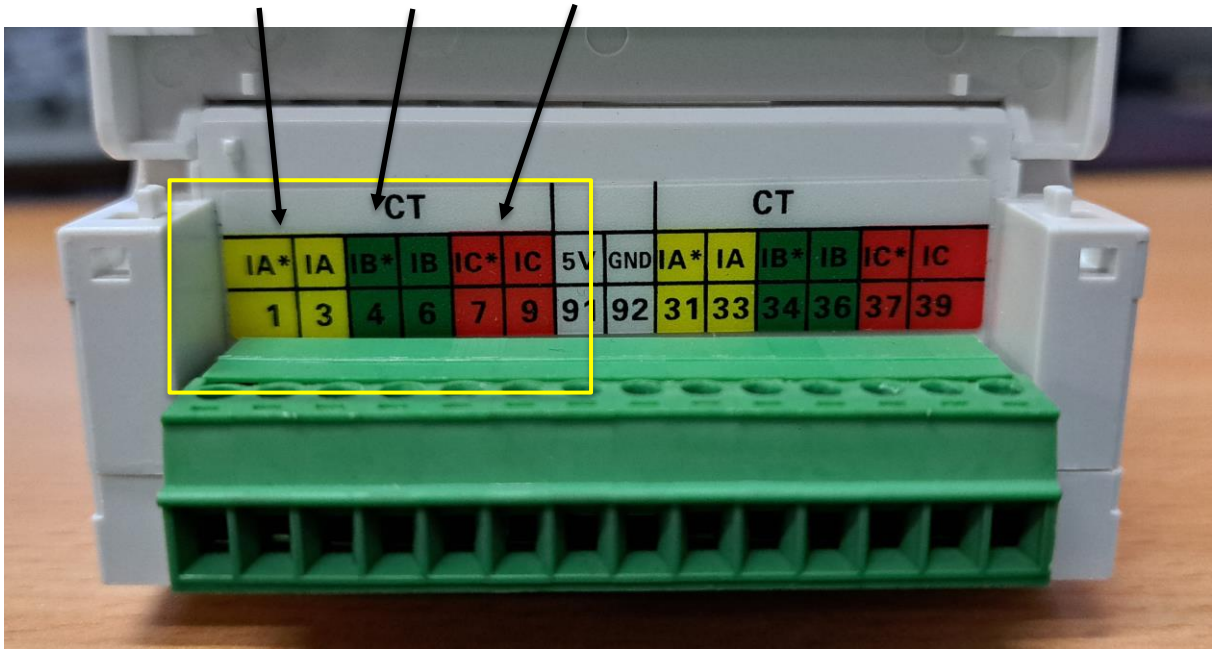
The current transformer for each phase must clip over the active conductor for the same phase. The CT must be between the main switch and all other loads including inverters. The arrow on the CT points from grid to load/inverter.

As an example, we will use a system where there is a 3-Phase Hybrid Inverter, and also a Single-Phase 3rd party inverter also connected.

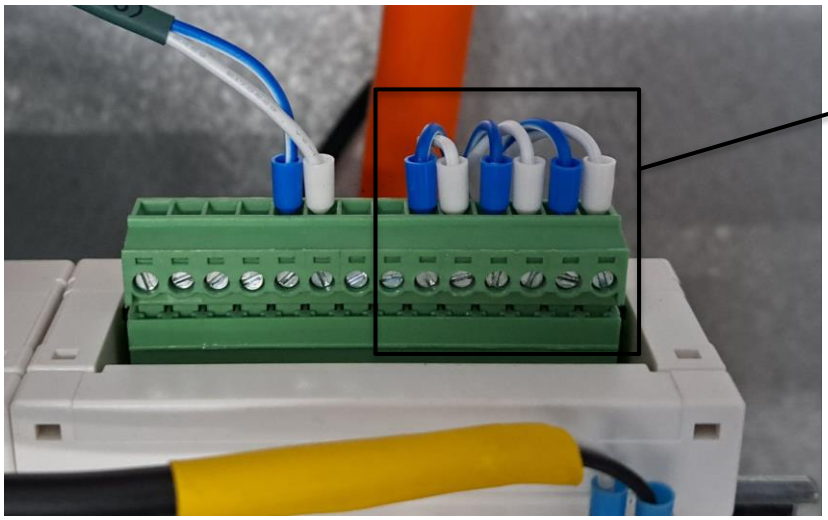


The primary CT(s) are connected at the top right of the meter, and clip over the incoming main(s).

In the below picture, ***we are looking down from the top***. The primary CT(s) is/are connected to: *Phase A* *Phase B* *Phase C*



An example of the 3-Phase installation below (seen from front):



CT's from 3-Phase mains.

Note that the white connector connects to the * terminal.

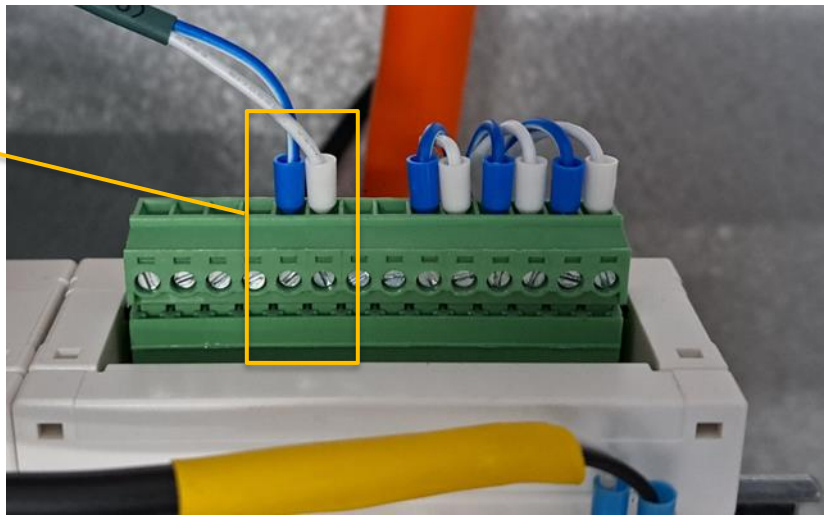
Secondary CT(s):

If there is a 3rd party inverter on site, the AC output is measured by the secondary CT's

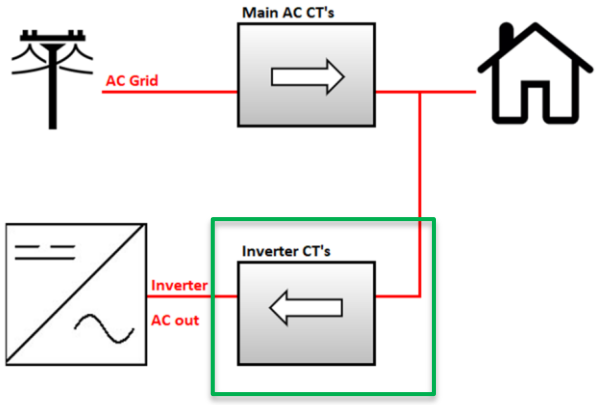
For a Single-Phase inverter, always put the CT on the phase that the inverter is connected to.

The DTSU666-20 can connect to Three-Phase inverters.

In this example, a Single-Phase inverter is connected to Phase A, so the CT will connect to Phase A



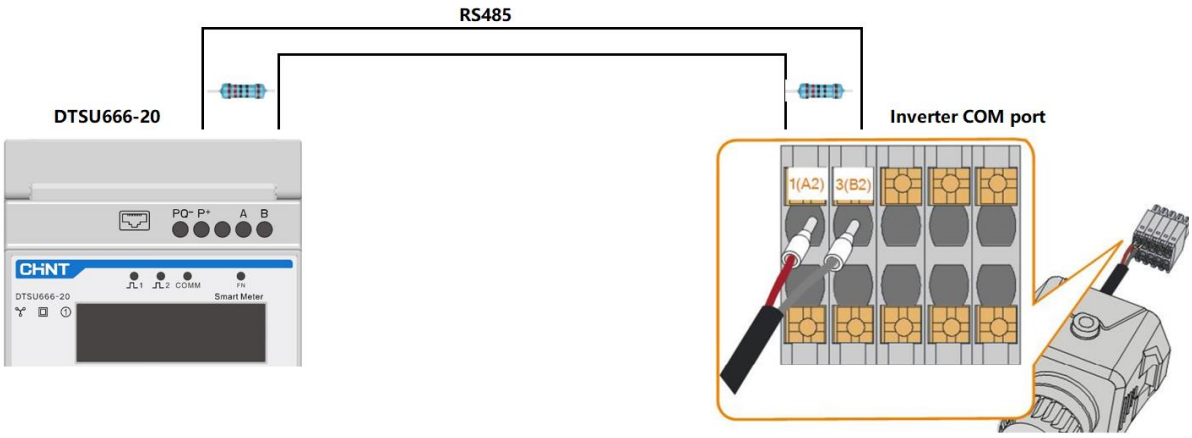
Ensure the CT is clipped over the AC cable from the inverter, and the arrow pointing towards the inverter.

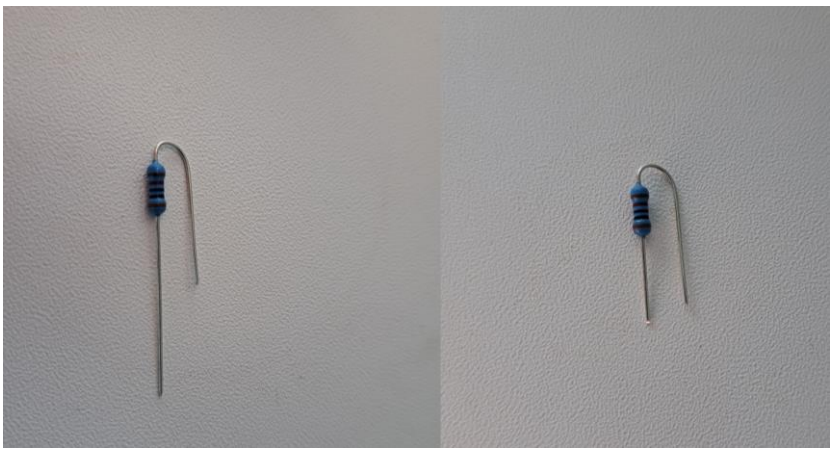


RS485:

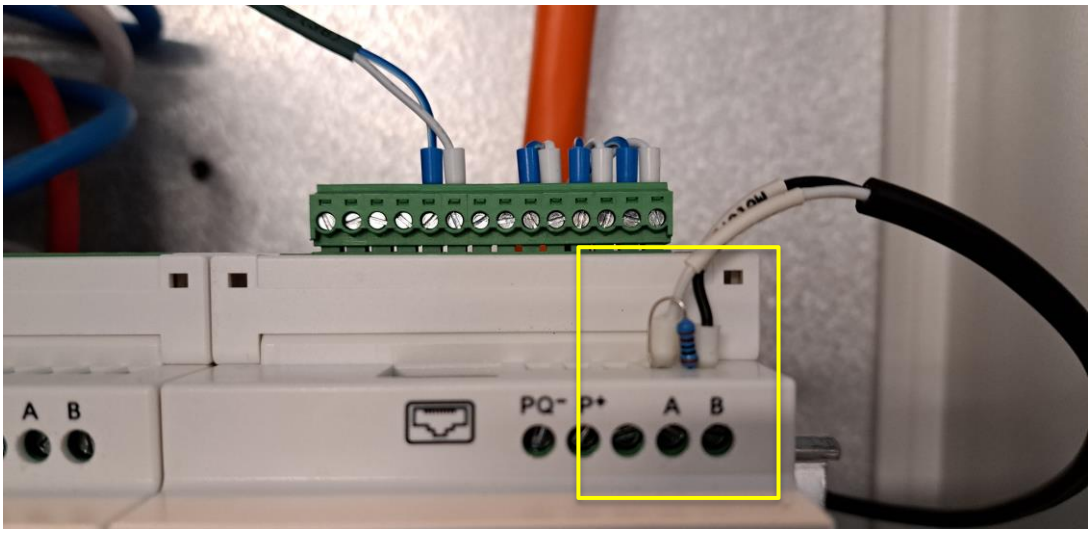
Using a Shielded Twisted Pair RS485 cable (Cat 5 and 6 not suitable), connect the A and B of the meter to the Meter A2/B2 on the inverter (check the pinout diagram on the left hand side of the inverter for correct connections).

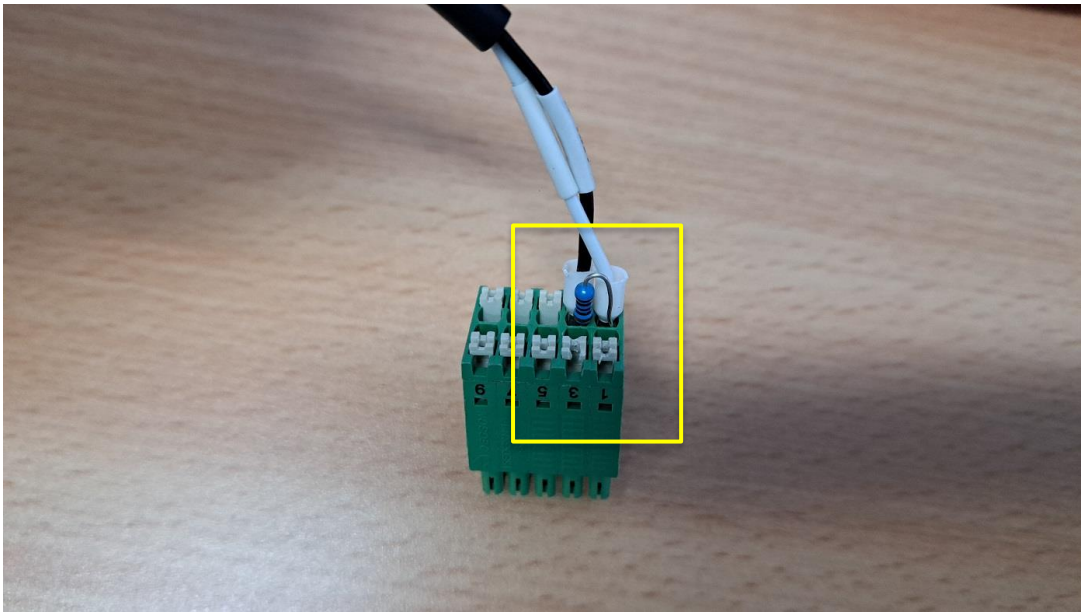
Bend the legs of the 120 Ohm resistors and connect across A and B at each end of the cable. (See Appendix A at the end of this document for more information).



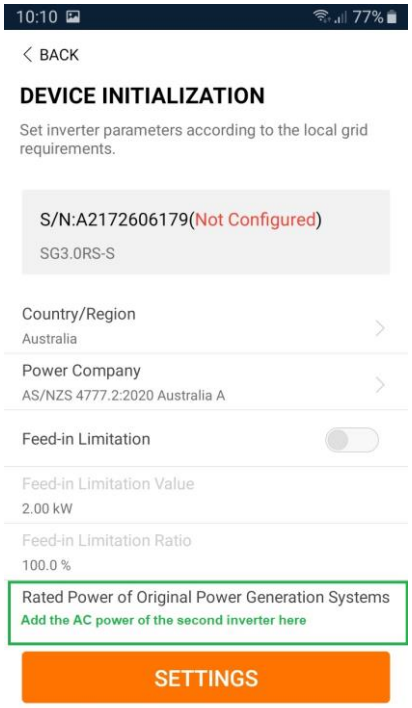


Insert at each end of the RS485 cable, ensuring both cable and resistor are secure.





Once everything is connected, power up the system, then commission as normal via the iSolarCloud App.



(Don't forget to include the 3rd party inverter AC power when you are commissioning!)

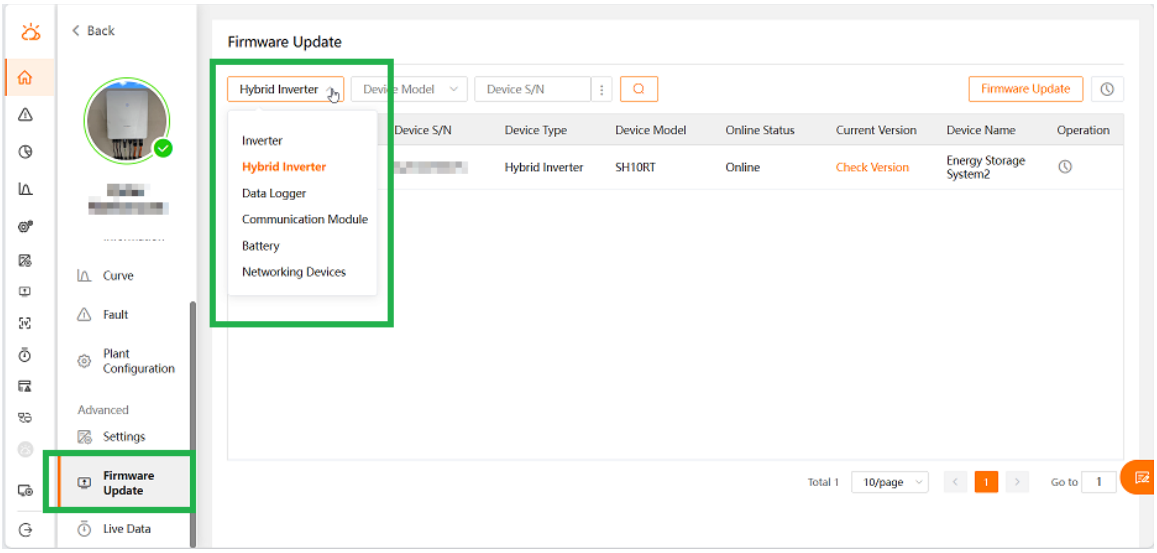
Settings:

There are no settings required in the meter as the defaults are pre-programmed and it is 'Plug and Play'.

(If you are using CT's larger than 100 Amp, please contact Sungrow for instruction - how to change the CT settings.)

Final step:

Ensure to update the firmware on the ***Dongle Inverter and Battery***, as part of your commissioning, and check on iSolarCloud.



Appendix A: RS485 cable.

RS485 is a specific protocol for data transmission that Sungrow uses for meter data. It is different from Ethernet, and the internal chipsets have different properties. As on all data systems, the cable must match the chipset in relation to impedance and capacitance etc, so that the data can transmit with minimum losses.

The correct cable should always be used*:

Correct cable usage	
Power	Power Cable
Audio	Audio Cable
HDTV	Coaxial
Ethernet	Cat 6
PV Solar	PV rated DC cable
RS485	RS485 cable (Shielded Twisted Pair)
Doorbell	Doorbell cable

**Although Cat 5 or Cat 6 'may' work, it also may not work correctly, and Sungrow cannot guarantee the performance.*

Shielded twisted pair cable with AWG of 20 or 22 is the correct cable.

Using the correct cable and terminating each end with 120 Ohm resistors will allow long cable runs without loss of signal.

If you are having connectivity problems, and have used Cat 5 or Cat 6 cable, please replace it with the correct RS485 cable before contacting Tech Support.

Appendix B – Supply of resistors:

Use 120 Ohm, 0.5W, 1% tolerance (Metal film are best)

They can be purchased at any electronics supplier online. Below are three options (Click for hyperlink).

As long as the resistor is 120 Ohms, any size will suit.

Jaycar Electronics

Element 14

RS Components

If the issue still persists, please take photos testing on site and contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au.