

Troubleshooting guide for the S100 Energy meter and EPS

The S100 Energy Meter is the 'brains' of the Sungrow hybrid system.

It tells the inverter when to charge or discharge the battery, when to go into off-grid mode, when to ramp down the output, and when to use AC to charge the battery.

It is therefore vital that it is connected properly.

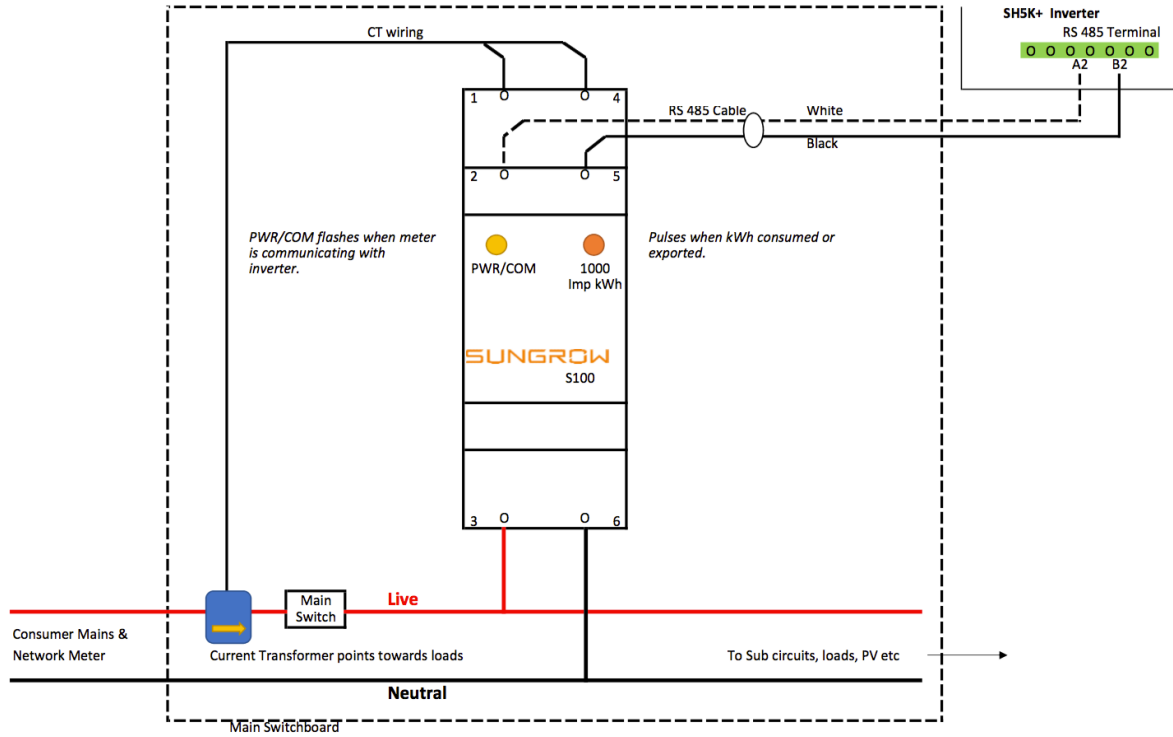
If it has not been installed properly, you may experience the following anomalies:

- Fault code 514 or 084
- Grid and house readings shown as "- -"
- Reversed or non-sensical readings on the display
- Battery not charging / discharging
- EPS cycling when in off-grid mode

Please check the following:

- Is the CT arrow pointing towards the house?
- Is the CT clamped securely over the TOTAL current carrying conductor(s) for the house?
- Is the reference voltage connected to the live at the main switch?
- Is the RS 485 cable connected properly and the correct polarity?
- If the RS 485 cable is longer than 50m is the 120 Ohm DIP switch in the 'ON' position?

Wiring Diagram for the Energy Meter - Sungrow SH5K+ (EPS Version)

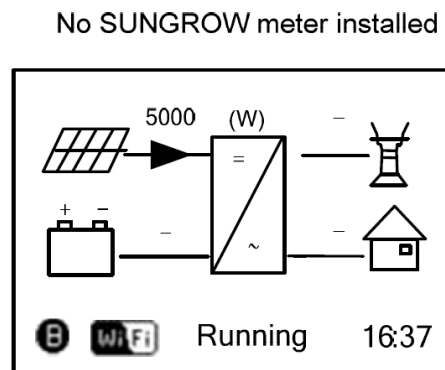


Testing the Energy Meter in a Sungrow SH5K+ (EPS) system

Correct connection of the energy meter is vital for the correct functioning of the SH5K+ system.

If you are not sure if you have connected it properly, here are some simple tests:

If the **RS 485 DATA** wiring is wrong or not connected, you will see something like this on the display.



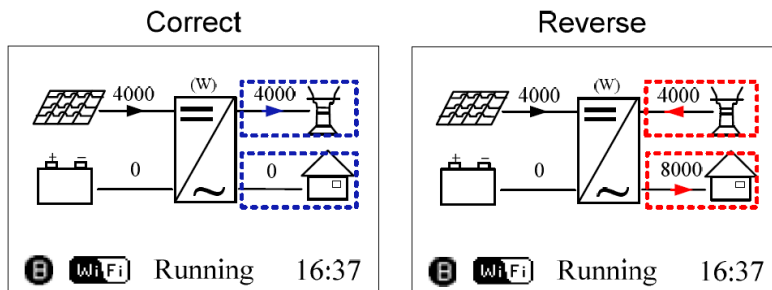
The display may also show fault code 514 if the wiring is wrong.

If the AC and Data wiring is correct and the meter is communicating with the inverter, the Amber LED PWR/COM on the meter will flash. (The 1000 Imp/kWh pulse is the counter for kWh).



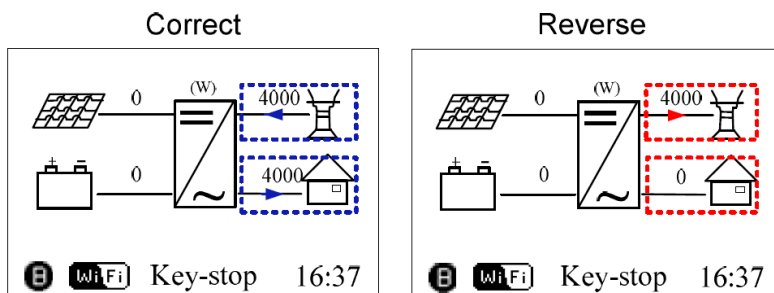
To check the correct installation of the CT:

Test 1 - Switch off all house loads and the battery (if connected) and make sure the PV is generating. All the generation should export to the grid.

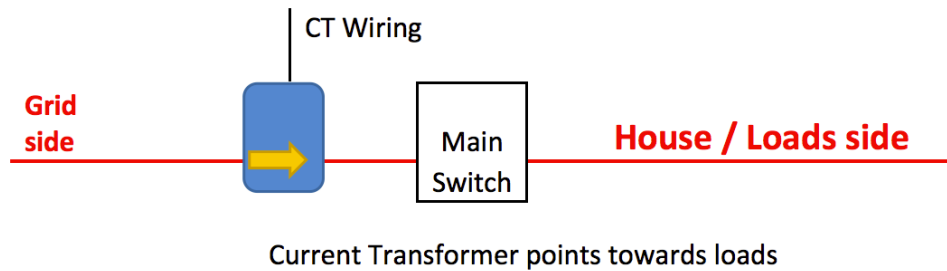


Test the AC Import/Export from house loads:

Test 2 - Switch off all DC supplies (PV and battery). Switch on some house loads so that it's consuming from the grid. The LCD Display should look like this:



If reversed, double-check that the arrow on the CT is pointing to the house / loads, and that ALL power cables are contained, and that the CT wiring is correct polarity (see wiring diagram).



If the EPS is installed:

Test the off-grid mode by pressing the red button (This won't interfere with house loads) on the top left-hand corner of the EPS box.



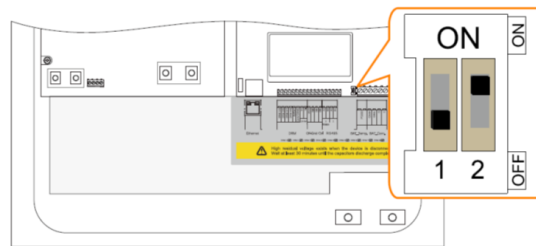
After a small delay of a few seconds, the inverter will switch into off-grid mode. If it does not, something is not wired correctly (or there is no PV / Battery voltage).

If OK, this proves the inverter and EPS box are working. Press the red button again to re-engage grid mode, and then (after a start-up), switch off the house main switch to simulate total blackout. You should get the same result.

If the inverter cycles, it is likely that the reference voltage of the meter is connected to the wrong part of the live circuit and picking up 240 V (probably the EPS circuit) and sending signals to the inverter that grid is on. Check the AC wiring.

Summary of connections:

- Reference voltage (energy meter) should be connected to the live circuit and Neutral, after the Grid Supply Main Switch but **before** the solar main switch and/or EPS box.
- The CT should be clamped over the 'Consumer Mains' cable (easiest before the grid supply main switch). The arrow must point toward the house/loads.
- The RS 485 cable should be connected between A1 (White) and B1 (Black) on the meter, and A2 (White) and B2 (Black) in the inverter. Use the 120 Ohm terminator switch (No. 2) if the cable run is long (over 50m).



Contact Sungrow Service Department on 1800786476 for further assistance.