Solplanet

Installation Guide

HYBRID INVERTER

ASW H-T1 Series

Due to a large number of questions, we have created
this start-up guide for the ASW H-T1 Series hybrid inverter.

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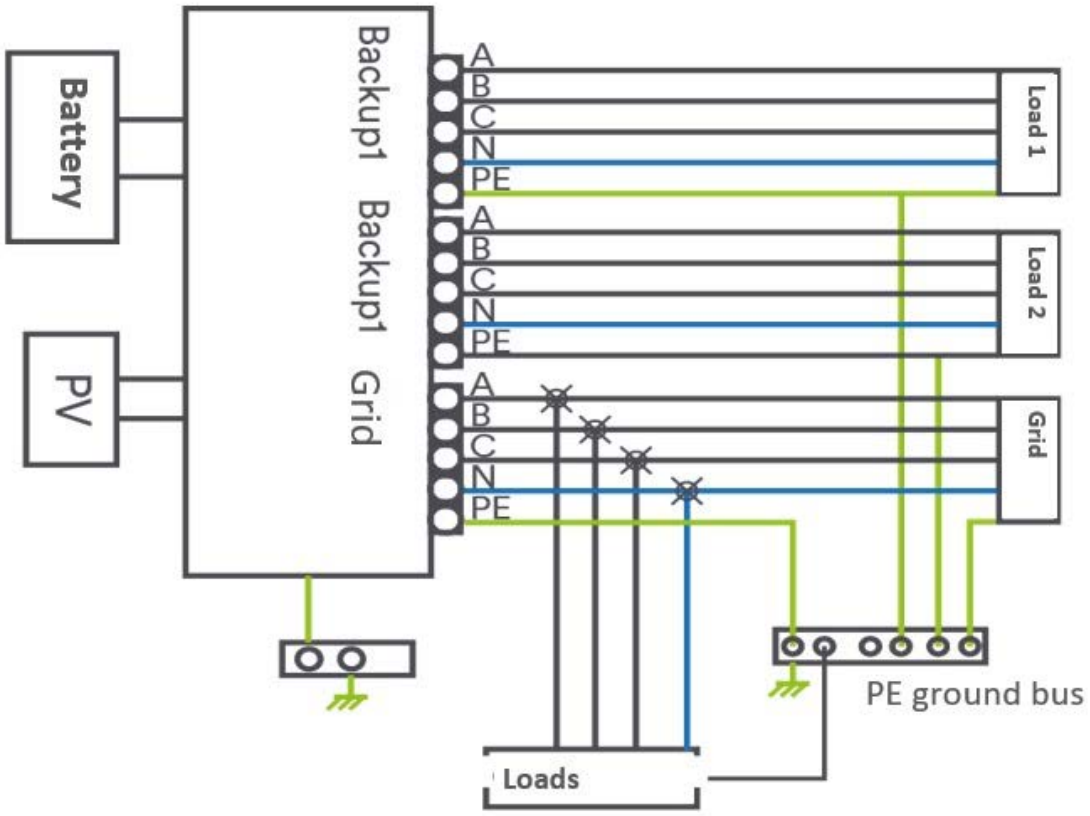
Connection

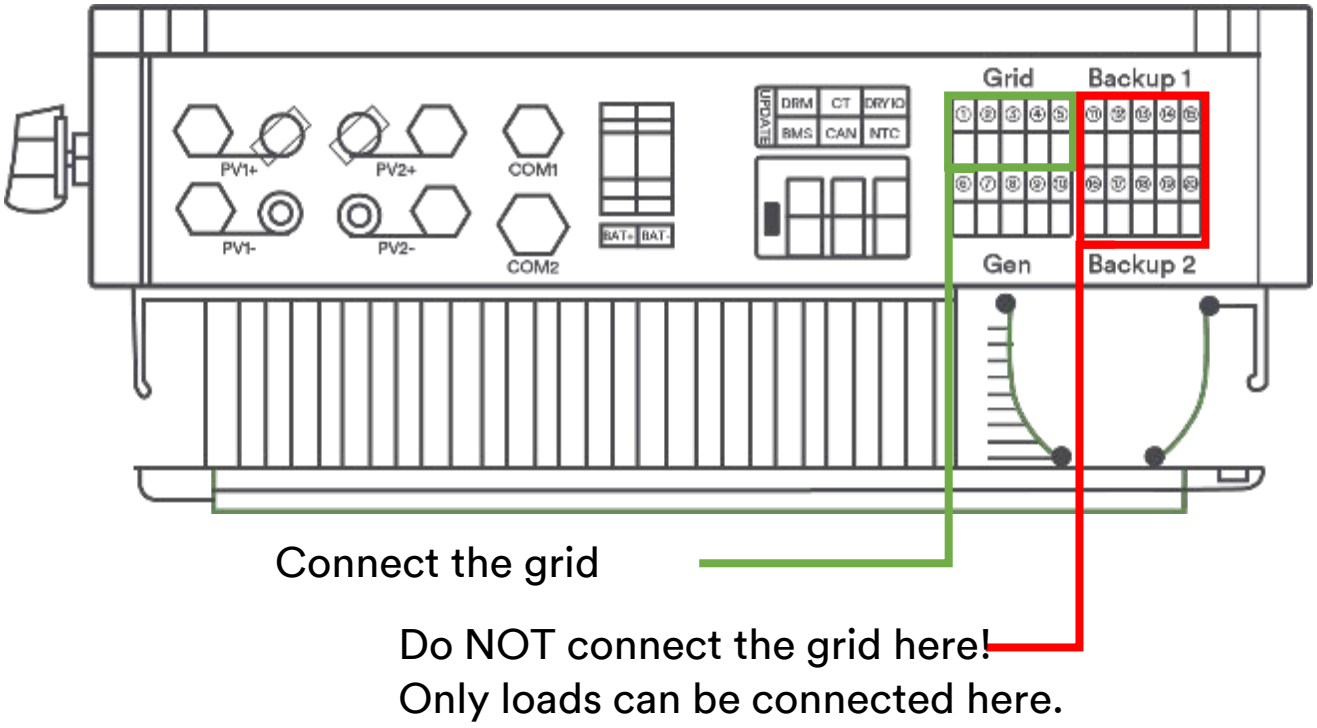
The following diagram is crucial:



Note:

- **No voltage must be applied to the backup connector!!!**
- The backup connectors are only the output that supplies the loads (in the event of a grid failure, the voltage from the battery and the PV will still be present on this connector)
- Note that the neutral N wire from backup must be connected

The figure below shows the connection slots and their description



Function	Label	Description
PV 1 string input slot	PV1+	PV 1 string positive input
	PV1-	PV 1 string negative input
PV 2 string input slot	PV2+	PV 2 string positive input
	PV2-	PV 2 string negative input
Communication interface	COM1	This function is reserved
	COM2	Wi-Fi stick interface
BAT slot	BAT+	Battery positive input
	BAT-	Battery negative input
Signal line interface	UPDATE	Firmware update slot
	DRM	Function temporarily not available
	CT	CT (current transformer) connector
	DRY IO	Dry contact
	BMS	BMS communication with the battery
	CAN	CAN communication
	NTC	NTC detection
Power grid	①	L1 phase of the grid line

Function	Label	Description
	②	L2 phase of the grid line
	③	L3 phase of the grid line
	④	N of the grid line
	⑤	Earthing of the grid line
GEN (The generator set function is currently not available)	⑥	L1 phase
	⑦	L2 phase
	⑧	L3 phase
	⑨	N
	⑩	Earthing
Backup1	⑪	L1 phase of Backup1 line
	⑫	L3 phase of the Backup1 line
	⑬	L3 phase of the Backup1 line
	⑭	N of the Backup1 line
	⑮	Earthing of the Backup1 line
Backup2	⑯	L1 phase of Backup2 line
	⑰	L2 phase of Backup2 line
	⑱	L3 phase of the Backup2 line
	⑲	N of the Backup2 line
	⑳	Earthing of the Backup2 line

Check the firmware version

As of October 26st, 2023, it is 10328 and V610-60005-26

Additionally, a version of the WiFi module: 22401-014R-m

If the firmware is older, you can call the service line to request a remote update (your inverter must be online).

Or you can follow the link below and do the update yourself:

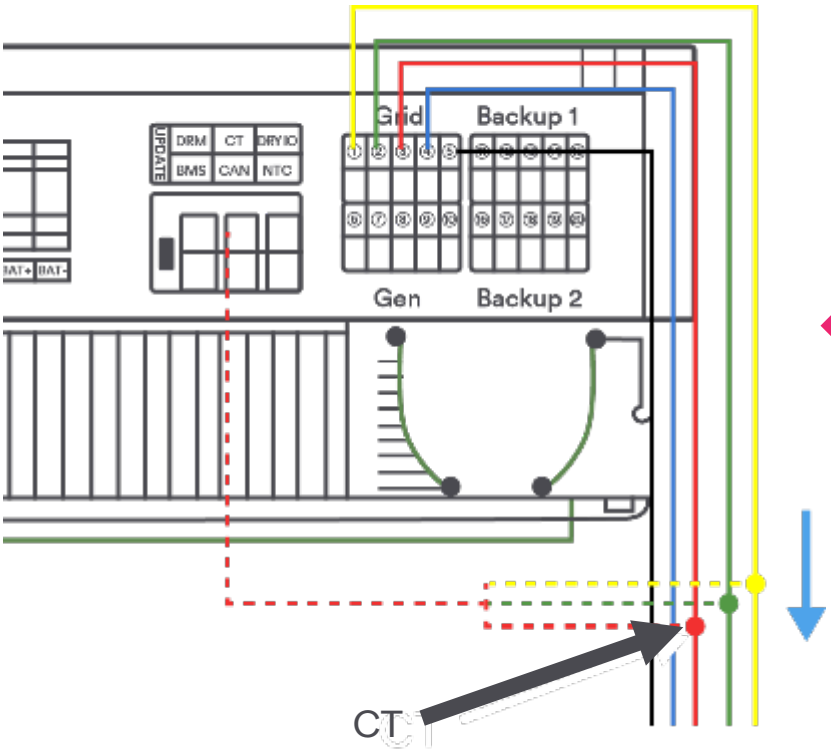
DOWNLOAD

Proper CT connection

The diagram below shows the correct CT connection.

Note:

- Each CT has a different color wire.
- Each color must correspond to the right phase according to the diagram.
- The arrow on the CTs must point toward the grid.
- If the sequence is not followed, data in the app will be incorrect and the inverter will not work properly.
- Do not disconnect CTs while current is flowing through them — this can result in electrocution and fire, and cause damage to the CT.
- Do not disconnect the CTs or change the order of the wires on the connection strip.
- Loads that are to be supplied from the grid should be connected where the arrow points (naturally, loads should be properly protected according to the regulations).
- The backup connectors are only the output that supplies the loads (in the event of a grid failure, the voltage from the battery and the PV will still be present on this connector).
- The neutral wire (N) of the loads that are connected to the backup must also be connected to the backup (appliances that use the backup must also have the N wire connected to this connector).



This is where the loads should be connected to the grid

The right sequence is crucial!

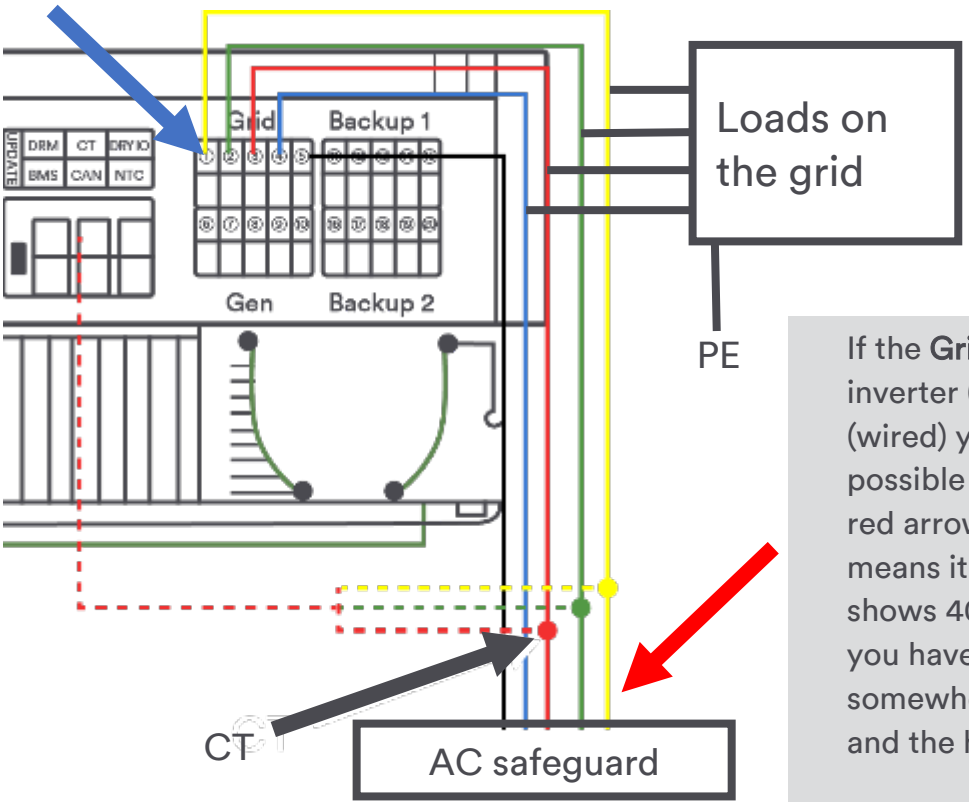
Included is a cable that connects the CT to the inverter.
It is approximately 1 meter long. If a longer cable is required, you can use a Cat 5 (24 AWG) shielded cable and extend it to a maximum of 50 meters.

Note:

- The cable must be clamped tightly.
- Make sure the connections are correct.

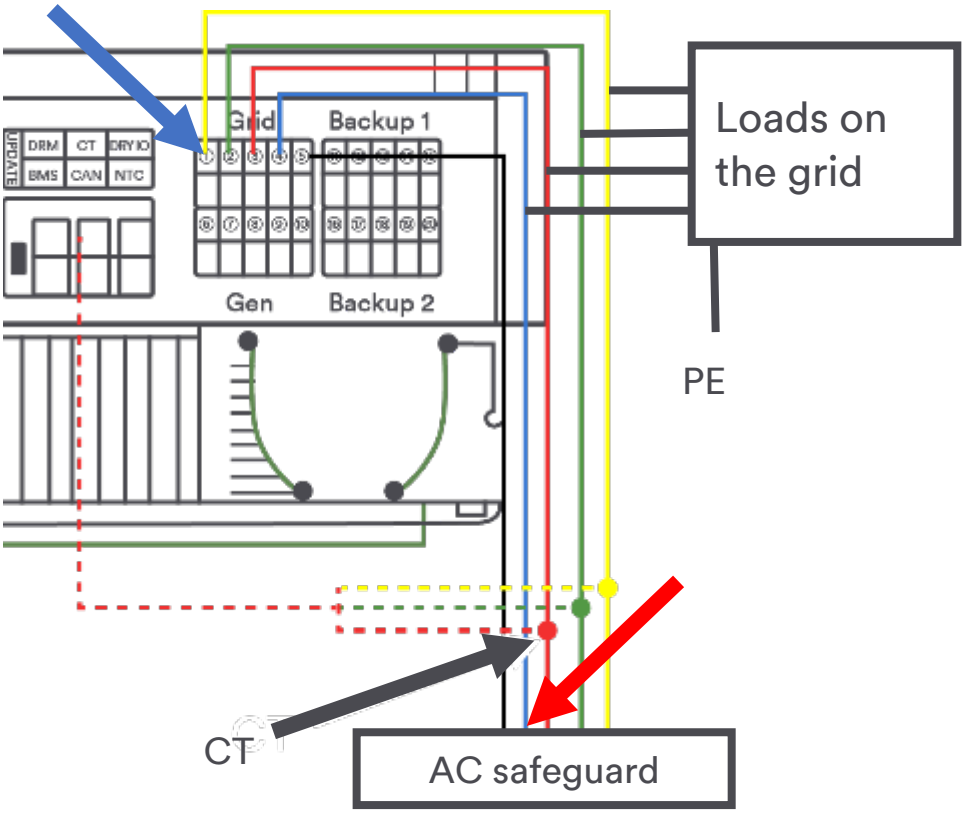
What if I think the CTs are connected correctly but are far away from the inverter? How can I be 100% sure it is ok?

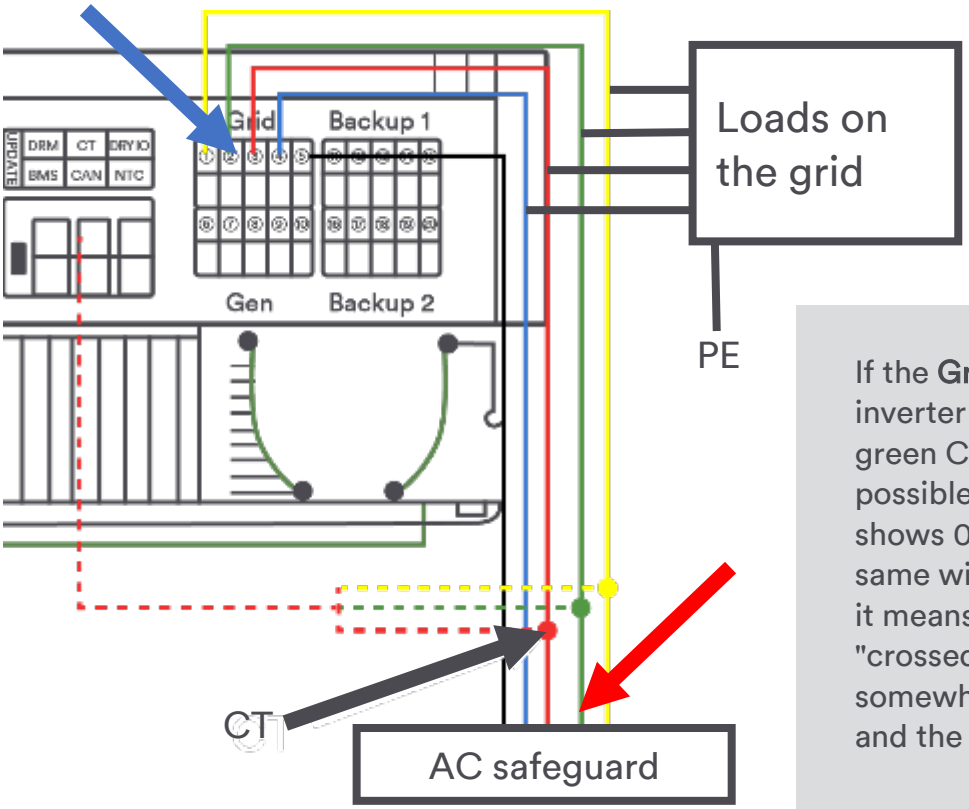
Check that the CTs are installed on the correct phases. To do this, take voltage measurements at several points.



If the **Grid L1** slot of the inverter (blue arrow) and the (wired) yellow CT (as close as possible to the yellow CT – red arrow) shows 0 V, it means it is the same wire. If it shows 400V, it means that you have "crossed" the wires somewhere between the CT and the hybrid inverter.

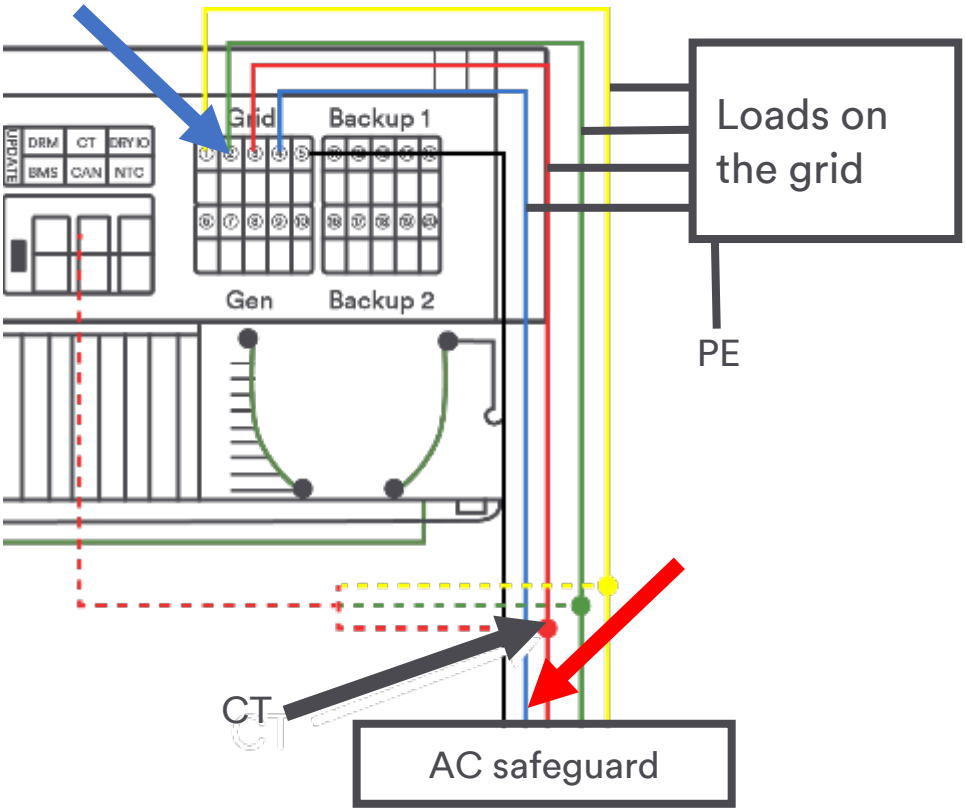
To be sure, you can take a measurement between L1 and N (it should be in line with the grid, around 230V).

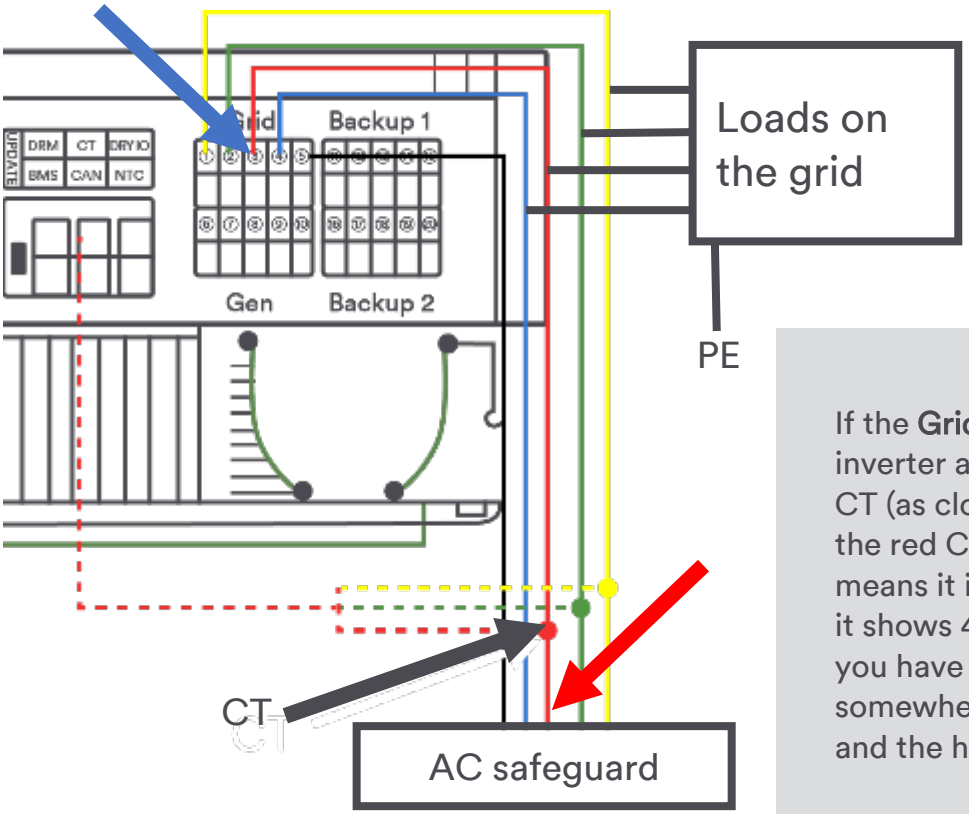




If the **Grid L2** slot of the inverter and the (wired) green CT (as close as possible to the green CT) shows 0 V, it means it is the same wire. If it shows 400V, it means that you have "crossed" the wires somewhere between the CT and the hybrid inverter.

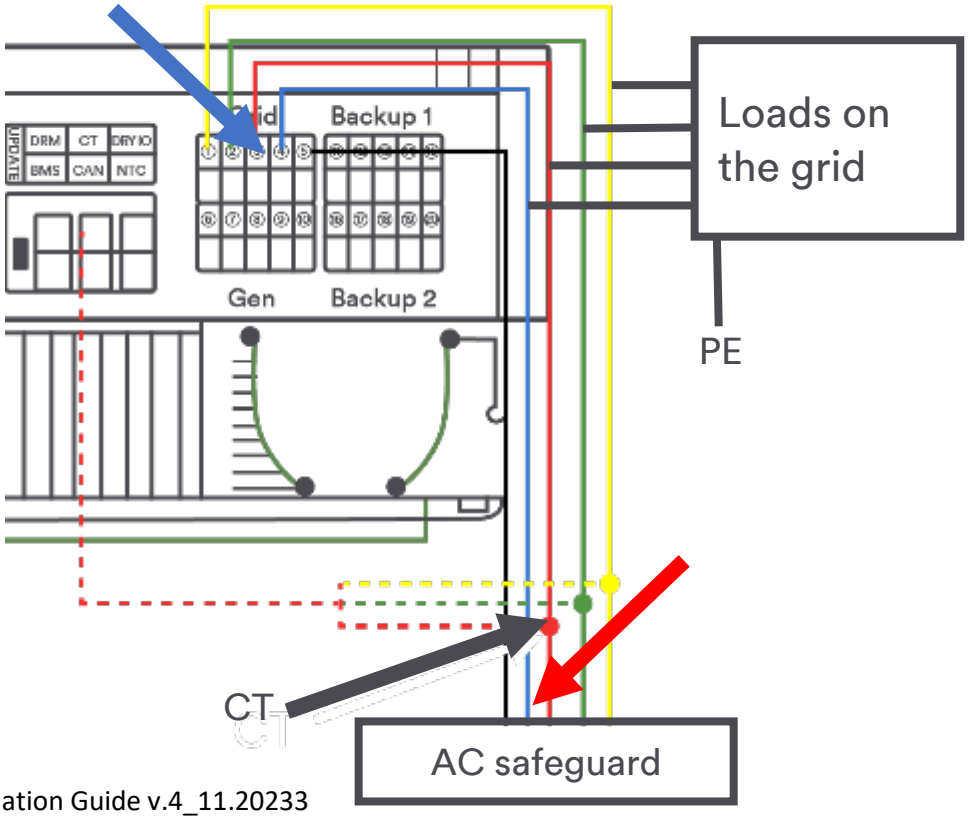
To be sure, you can take a measurement between L2 and N (it should be in line with the grid, around 230V).





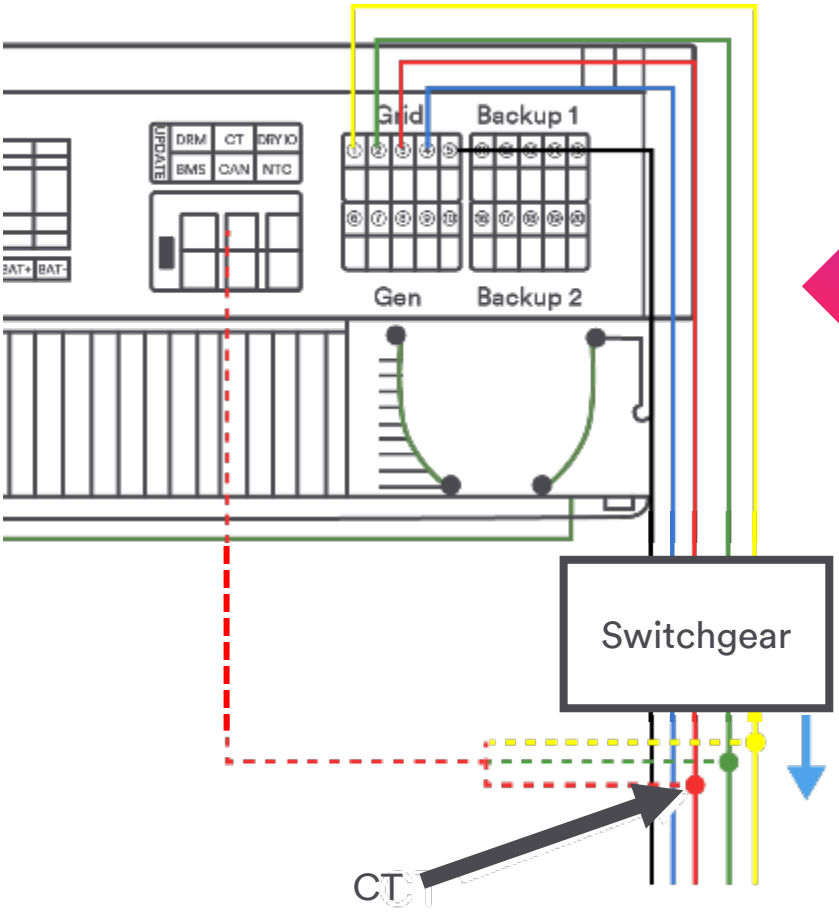
If the **Grid L3** slot of the inverter and the (wired) red CT (as close as possible to the red CT) shows 0 V, it means it is the same wire. If it shows 400V, it means that you have "crossed" the wires somewhere between the CT and the hybrid inverter.

To be sure, you can take a measurement between L3 and N (it should be in line with the grid, around 230V).



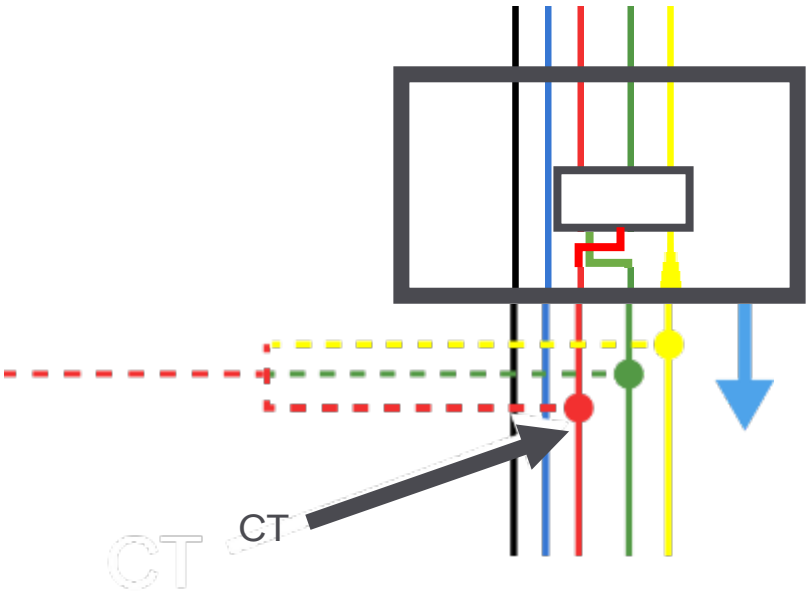
Below is an example of wires crossing

Let's say there is a switchgear downstream:



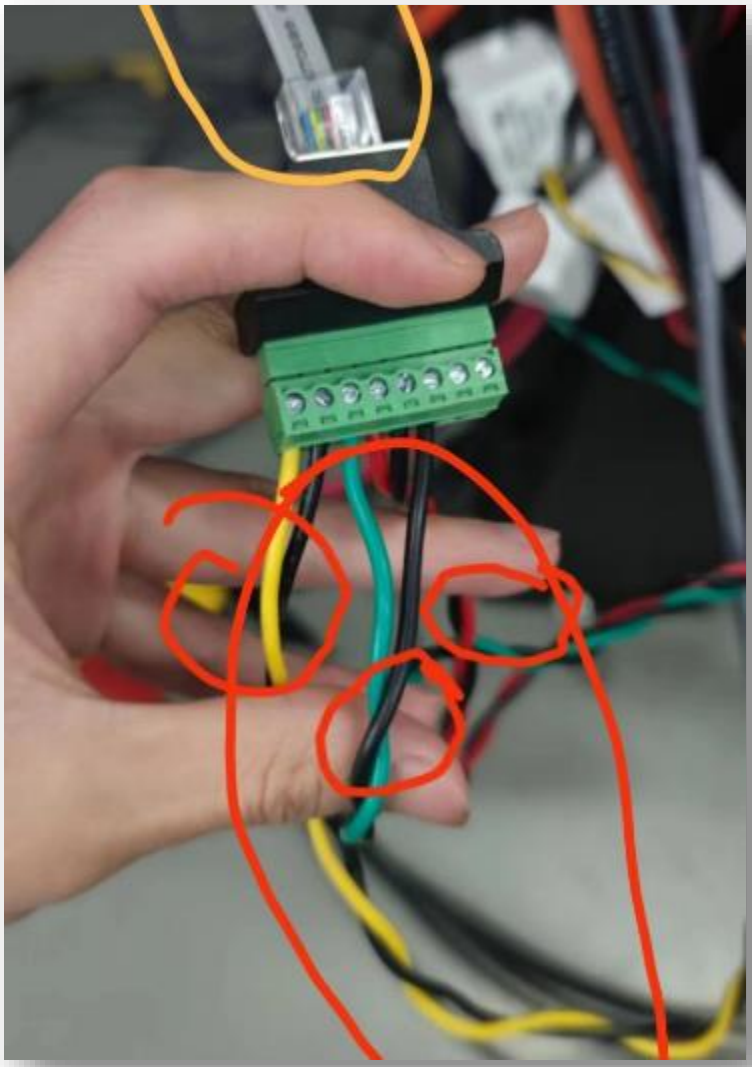
This is where the loads should be connected to the grid

Inside the switchgear:



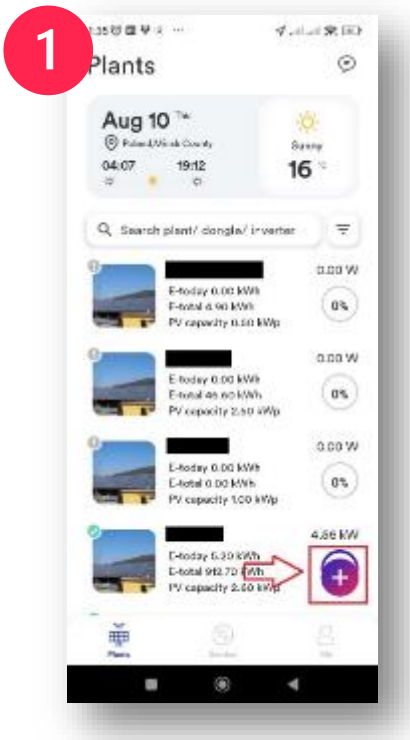
As you can see, the CT with the green wire will then be on L3 phase, and the CT with the red wire will be on L2 phase (it should be the other way round). In that case the inverter will not operate correctly.

Below is the correct connection of the CTs to the terminal strip.



Checking the connection of the CTs to the inverter (e.g. after making a longer cable running to the CTs – RJ45 connector):

To do this:



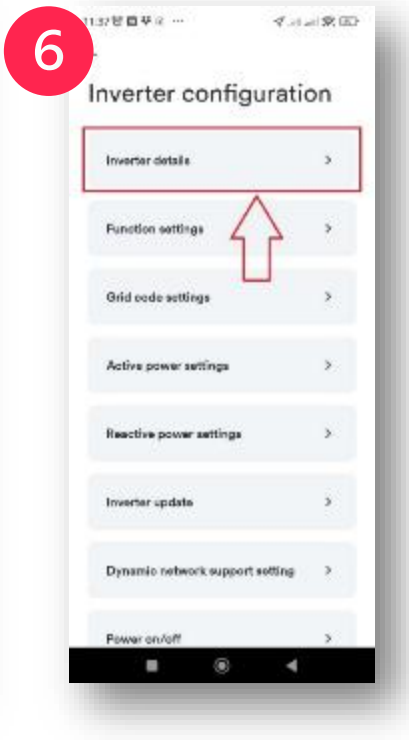
Click ⊕ in the bottom right corner

Click Configure parameters ⚙

Scan the code on the communication module

Select the network connection (if the inverter is connected to the cloud and the blue LED is on)

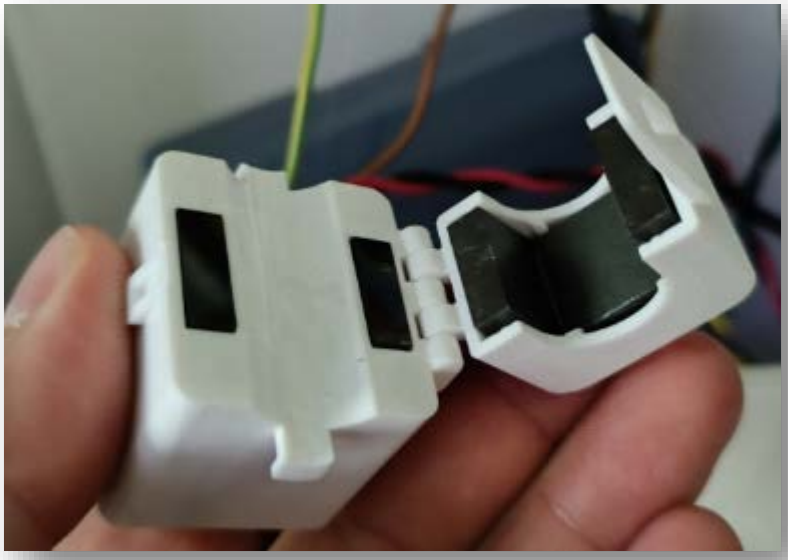
Select an inverter to enter its settings



Enter inverter details

The next steps

Disconnect the CTs and leave only one



IMPORTANT!

Open the CTs in this way

Note:

Do not disconnect the CT wires when current is flowing through the CT!!!

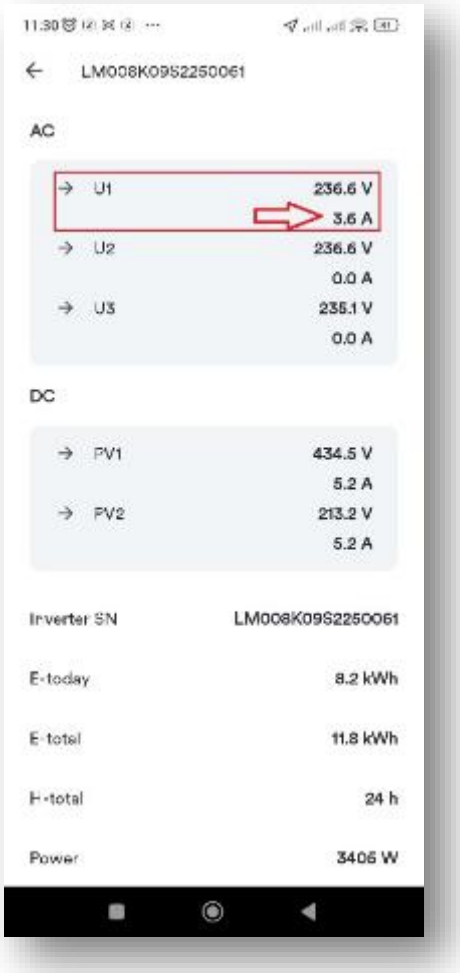
First, we disconnect phase 1 in the hybrid inverter

the one on which the transformer with the yellow wire is installed and check whether the voltage on phase L1 (U1) or phase L3 (U3) in the APP has disappeared, reconnect the cable.

Leave the CT with the yellow wire. Disconnect other CTs and check if in the app there is any current value on the same phase on which we lost the voltage

earlier, if we lost the voltage on L1 (U1), we should see it in this place.

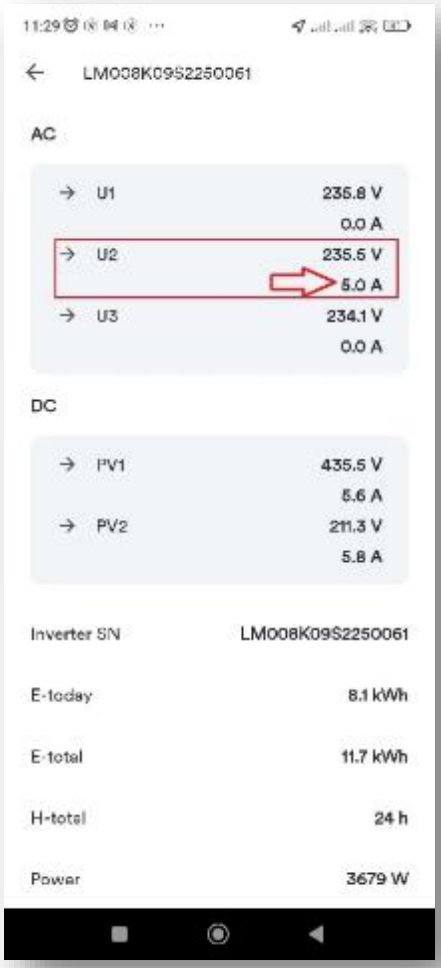
Other phases should show 0 (in the event of low current consumption in the building, put a load on this phase).



If the values that you see here are as in this picture, it means that the CT is connected to the inverter correctly (or on U3 if we previously lost voltage on U3 in the application). If there is a value on another phase, it means that the CT is connected to the inverter incorrectly (the most common issue is with the RJ45 connector – a mistake made by the installer when making a longer cable than the one supplied).

Leave the CT with the green wire. Disconnect other CTs and check if there is any current value on L2 (U2) in the app.

Other phases should show 0 (in the event of low current consumption in the building, put a load on this phase).



If the values that you see here are as in this picture, it means that the CT is connected to the inverter correctly. If there is a value on another phase, it means that the CT is connected to the inverter incorrectly (the most common issue is with the RJ45 connector – a mistake made by the installer when making a longer cable than the one supplied), or wires have been switched in the green terminal strip.

First, we disconnect phase 1 in the hybrid inverter

the one on which the transformer with the yellow wire is installed and check whether the voltage on phase L1 (U1) or phase L1 (U1) in the APP has disappeared, reconnect the cable.

Leave the CT with the yellow wire. Disconnect other CTs and check if in the app there is any current value on the same phase on which we lost the voltage earlier, if we lost the voltage on L3 (U3), we should see it in this place.

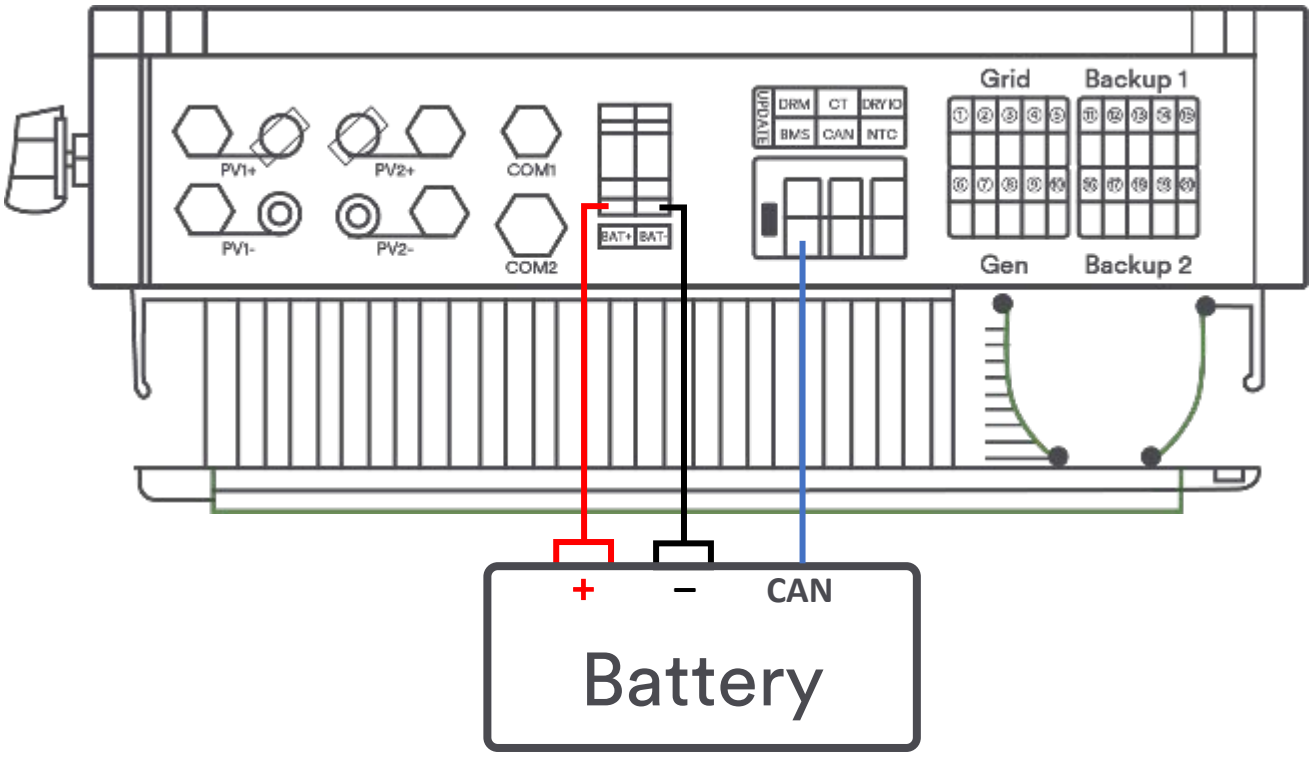
Other phases should show 0 (in the event of low current consumption in the building, put a load on this phase).

If the values that you see here are as in this picture, it means that the CT is connected to the inverter correctly (or on U1 if we previously lost voltage on U1 in the application). If there is a value on another phase, it means that the CT is connected to the inverter incorrectly (the most common issue is with the RJ45 connector – a mistake made by the installer when making a longer cable than the one supplied).

Battery connection

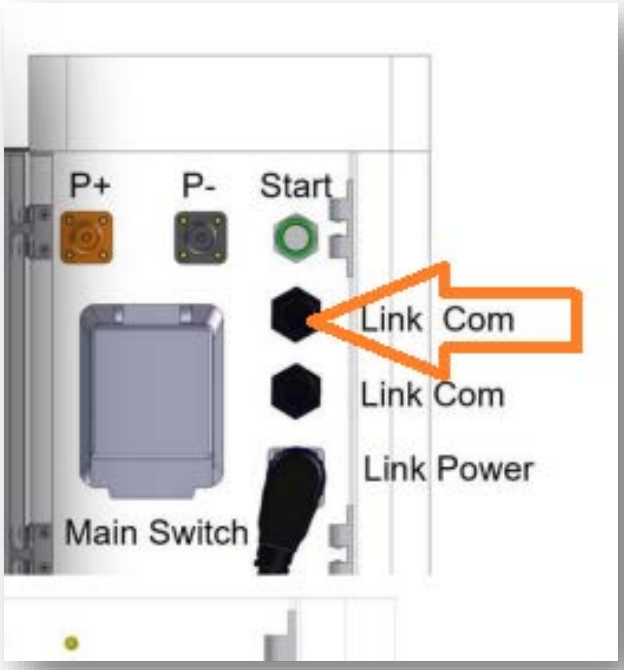
Note:

- The CAN slot on the battery should be connected to the BMS slot on the inverter.
- Use a suitable cable.
- Check battery BMS software update (for Pylontech).



Dyness:

Solplanet:



In some cases, the order in which energy sources are connected is important.

The correct order is as follows:

1. Energy bank (after starting it up, wait about a minute and hold down the start button again until the inverter starts up).
2. AC and Backup
3. DC

Why is the schedule in the battery custom settings mode not working?

If you have this problem, try setting one opposite schedule.

This problem does not occur on software

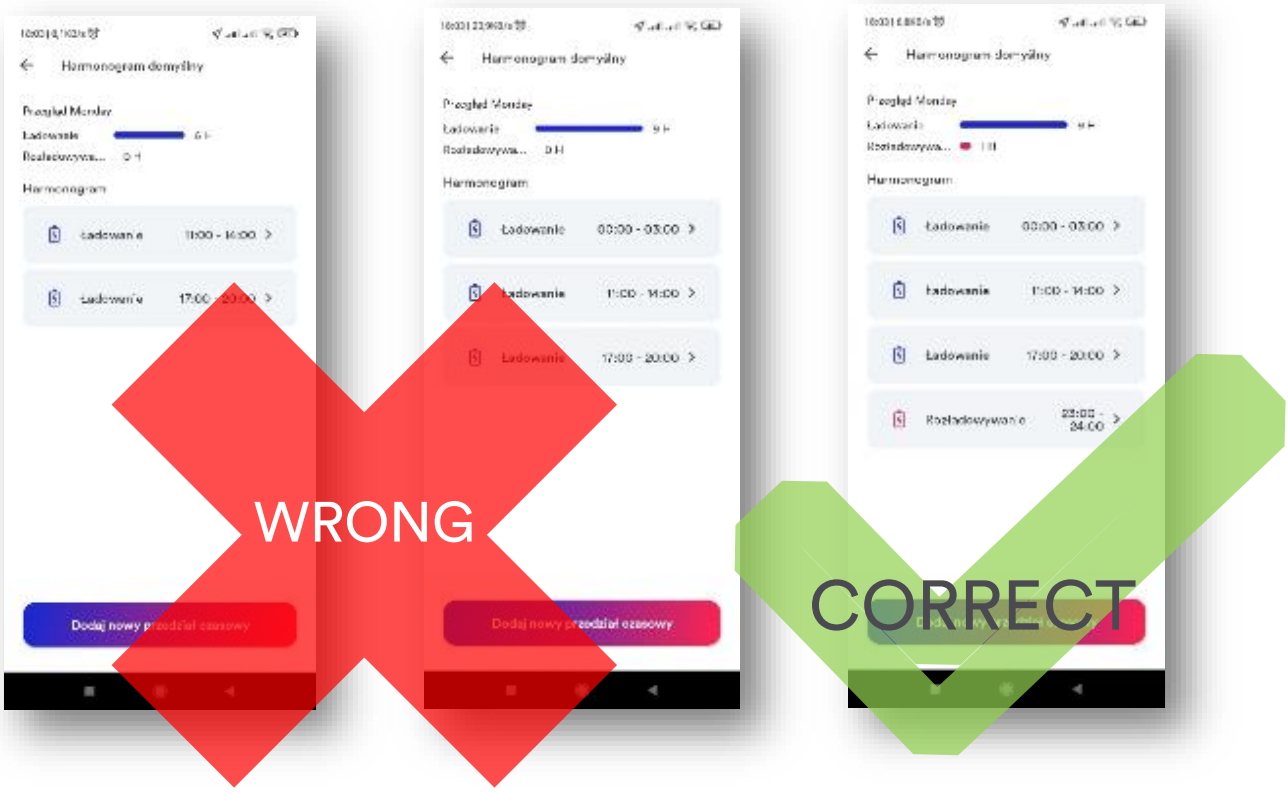
Master: 10328,

Slave: V610-60005-26

WiFi module: 22401-014R-m

Or newer

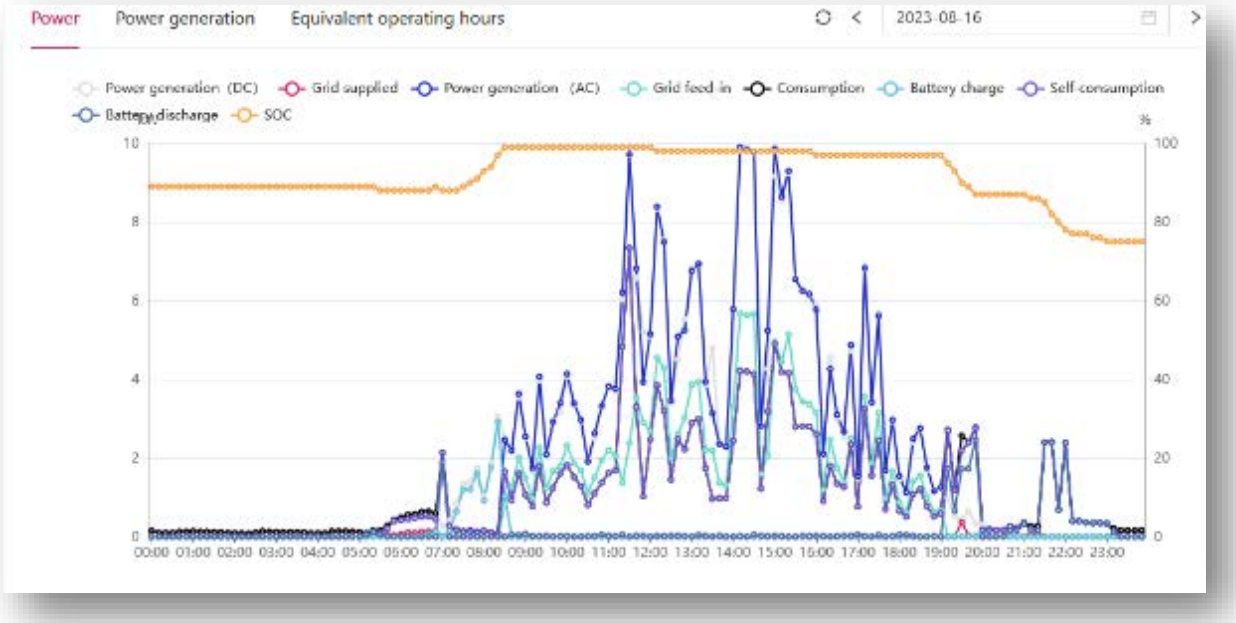
Example below:

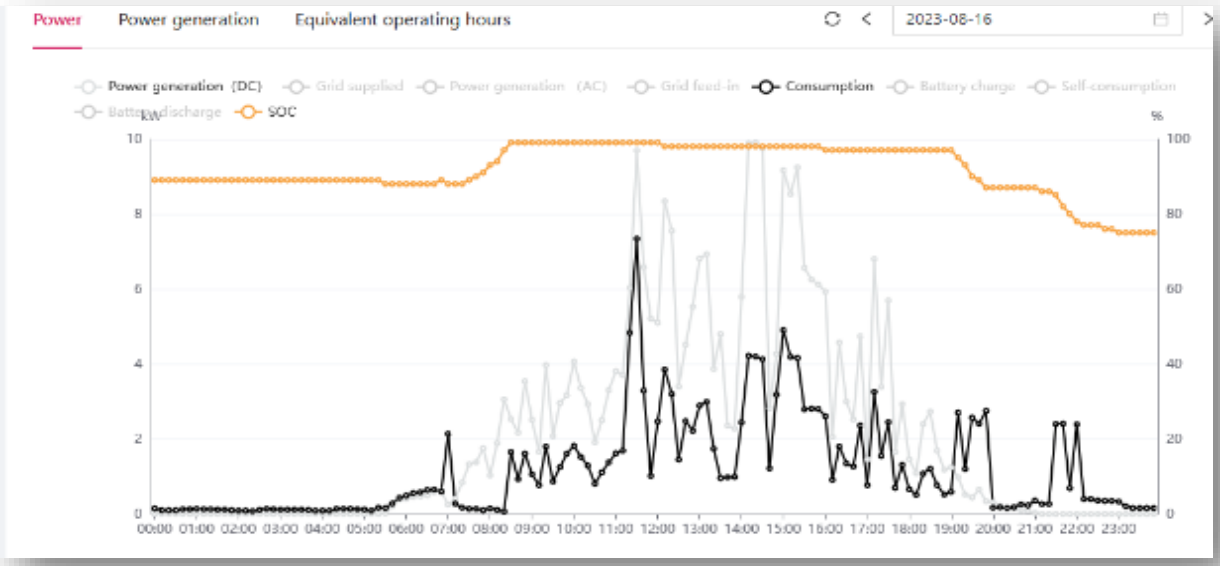


In this case, the discharge can be as low as 0W but it is important that the schedule is set. In custom mode, where no schedules are set, the battery operates as in Self-Consumption mode.

Consumption increases with production from PV

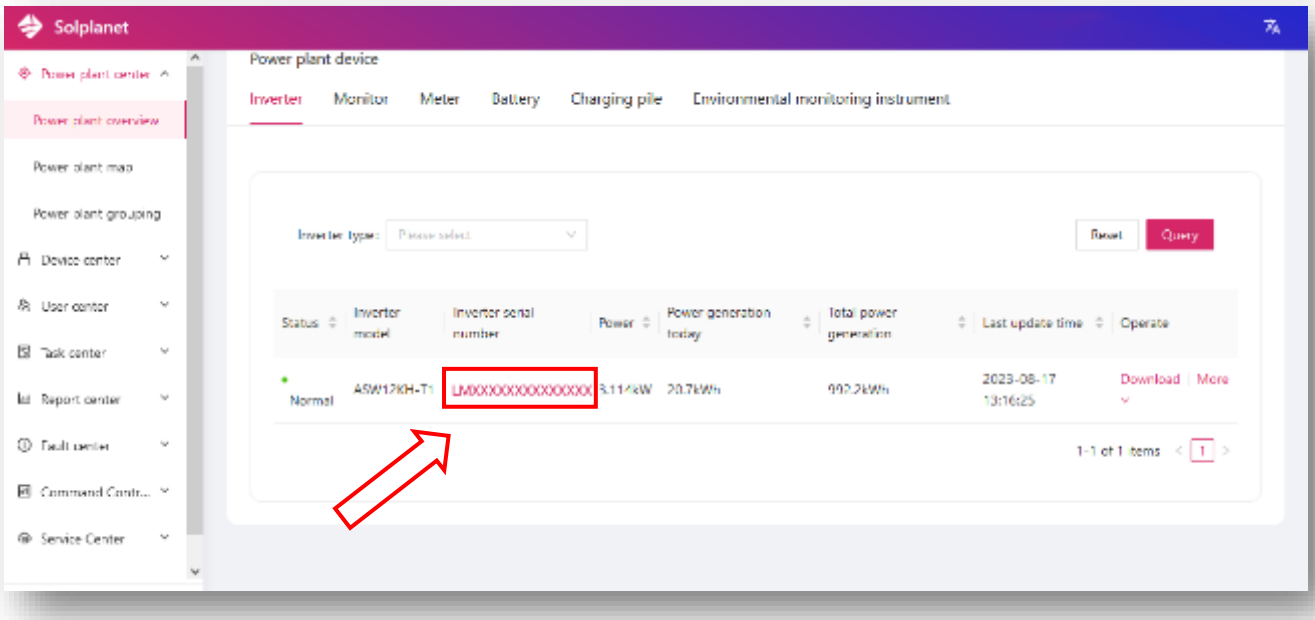
If you have a situation like the following:



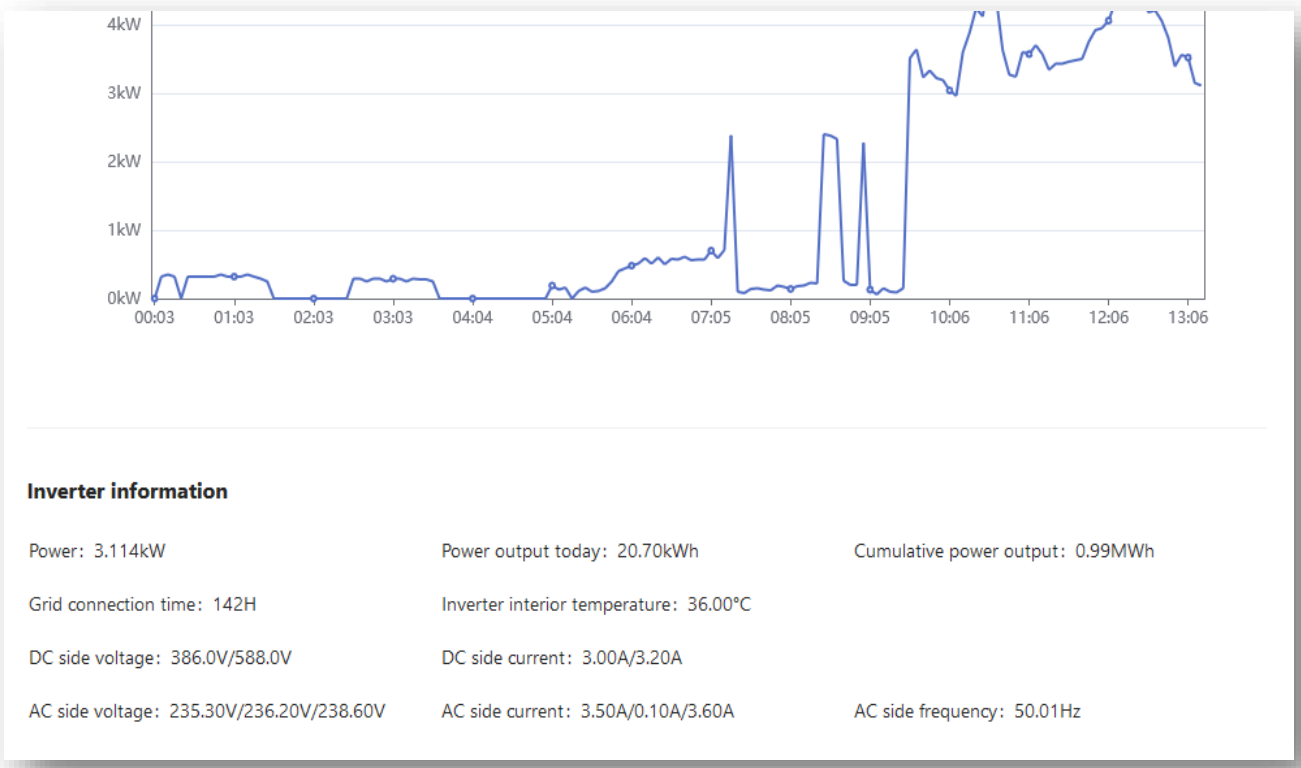


Where energy consumption increases proportionally with production, this implies some kind of error in the CTs. If you have not checked the previous points, then you should check if the portal shows data from all the CTs.

To do this, click on your inverter in the portal:



And check the data from the CTs:



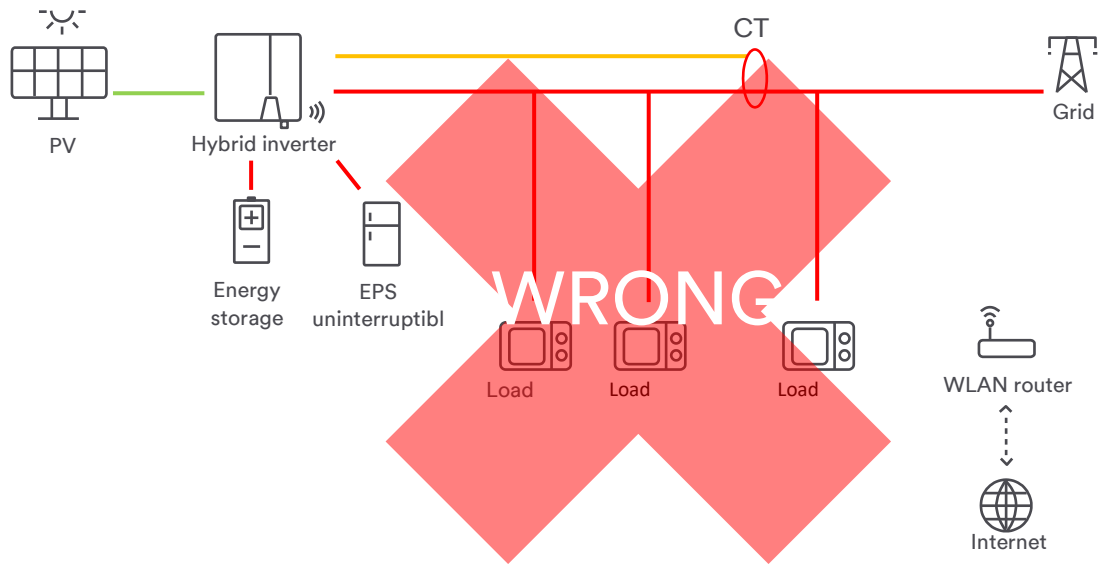
If you see a value close to 0, then you can be sure that:

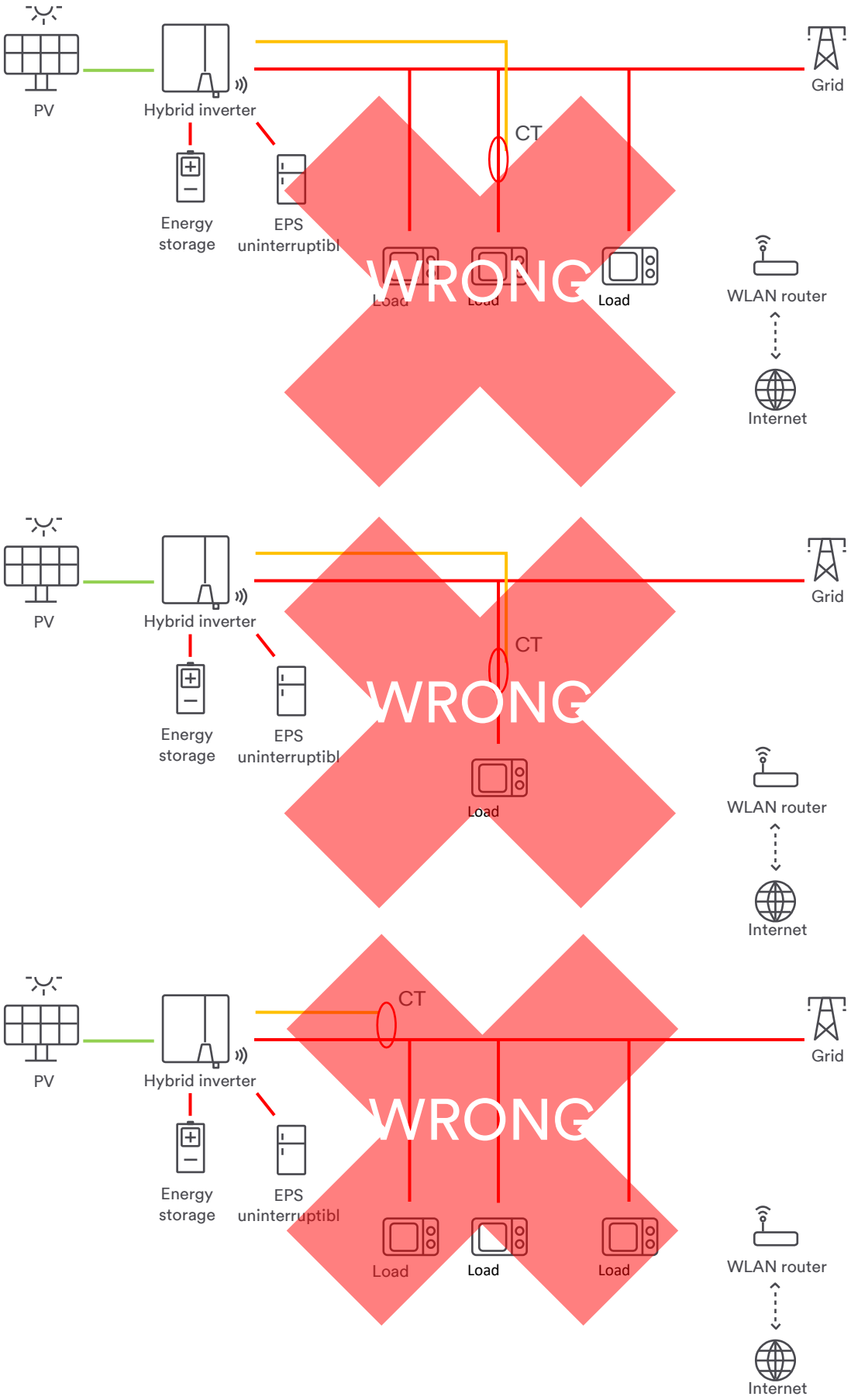
- a CT has a break in the electrical circuit (for example, RJ45 is not inserted correctly)
- the CT is incorrectly clamped on the wire (not tightened)
- the CT is defective because you put it on a wire when a large current was flowing through it and it was not electrically connected to the inverter (first connect the CTs electrically to the inverter then put them on the wires).

If there is data from all the CTs, you need to follow section 3 of this guide.

Most common mistakes

- incorrect sequence of CTs
- incorrect direction of current flow on the CTs (arrow should point towards the grid)
- incorrectly connected battery CAN
- sometimes the battery CAN is connected to the inverter CAN
- the correct connection is: battery CAN should be connected to the inverter BMS
- old firmware
- CTs installed in the wrong place; examples below:




PV
Hybrid inverter
Grid
CT
Energy storage
EPS uninterruptibl
WRONG
Load
Load
Load
WLAN router
Internet
PV
Hybrid inverter
Grid
CT
Energy storage
EPS uninterruptibl
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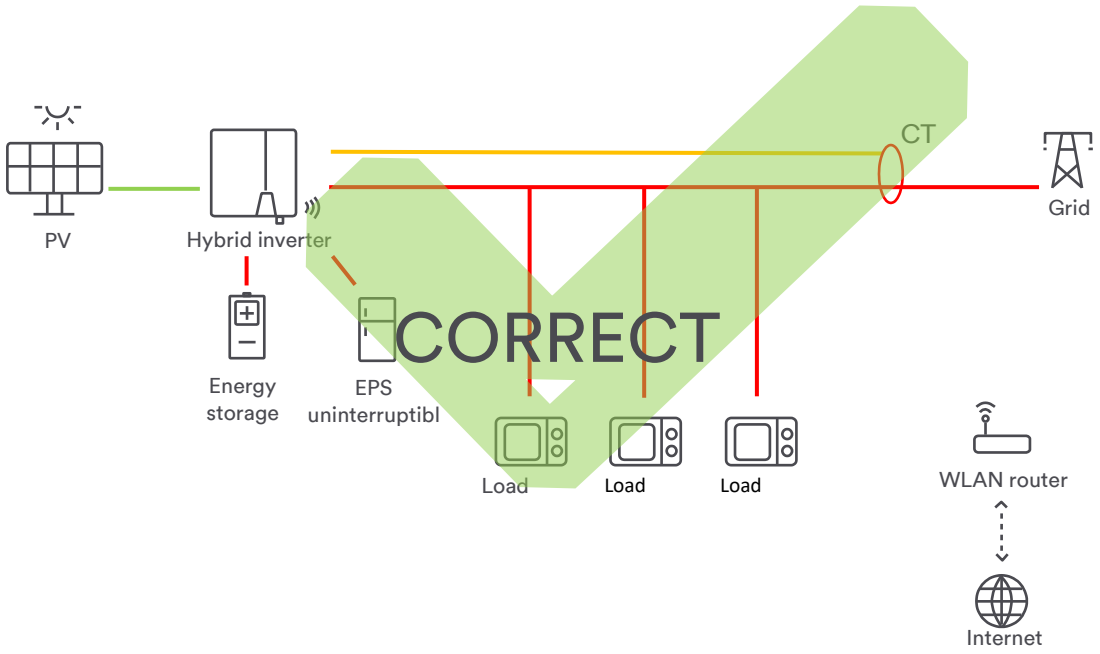
WLAN router
Internet



Note:

Loads must be properly safeguarded according to regulations!

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