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SUNGROW POWER SUPPLY CO., LTD.

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New SH5K-30 Hybrid Inverter
Installation Overview

Presenter: Graham Smith
Date: September 2020

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Sungrow SH5K-30 Overview

The Sungrow SH5K-30 is a single-phase Hybrid Inverter

It comes with a 10-year warranty

It has an internal backup / changeover function

It has inbuilt DC isolator

It can also be installed as Retro-fit to an existing system

System Components

SH5K-30 Hybrid Inverter
(Supplied with S100 Energy Meter and a WiFi Dongle)

SH5K-30
Hybrid Inverter

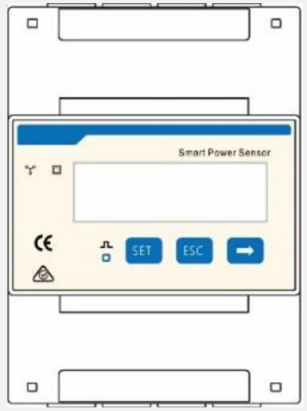
S100
Energy Meter

WiFi Dongle

Sungrow-Samsung SDI SBP4K8 Battery*
(Scalable up to 3 units)

** Refer next page for third-party battery compatibility*

SBP4K8
Li-ion Battery



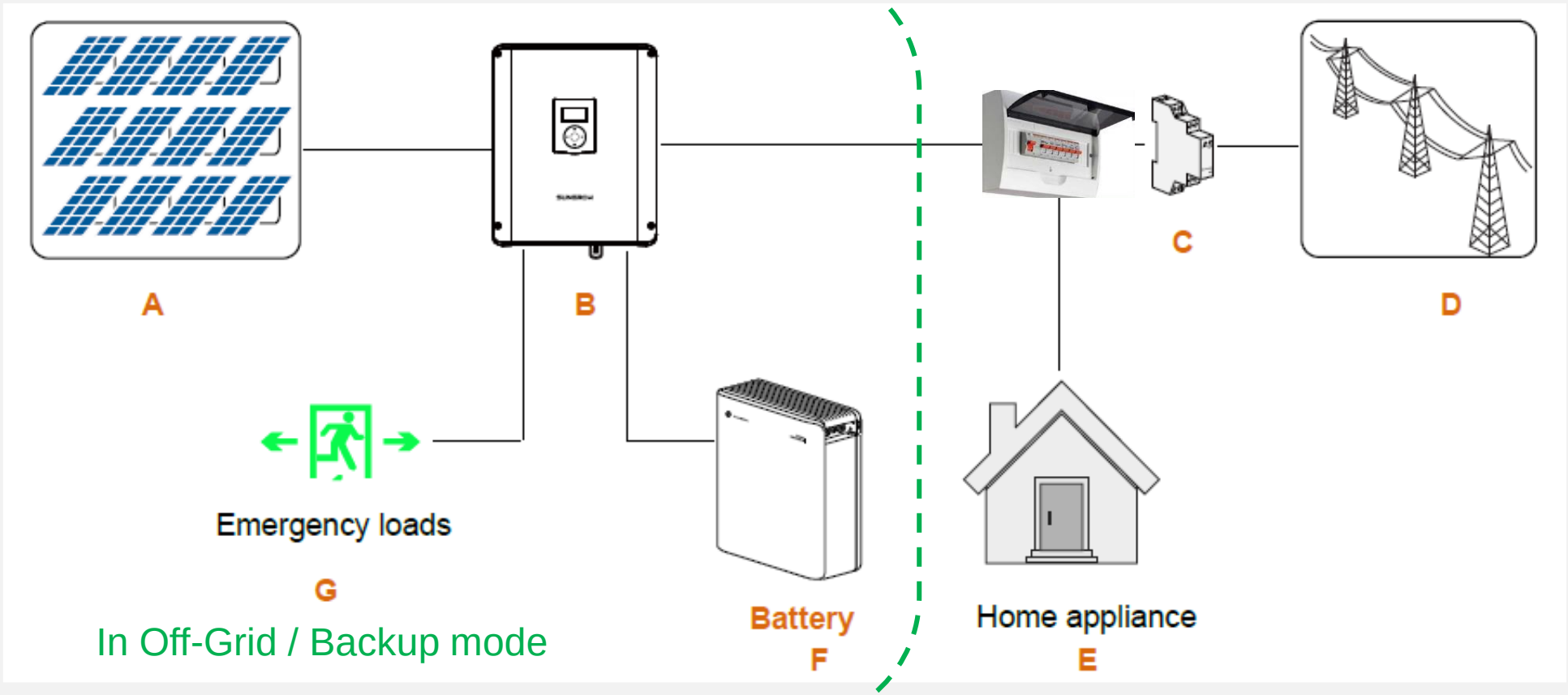
Optional extra – DTSU666
3-Phase meter

Battery Compatibility (48 Volts)

- Sungrow-Samsung SDI SBP4K8 Li-ion
- LG Chem Li-ion (LV)
- BYD Li-ion (LV)

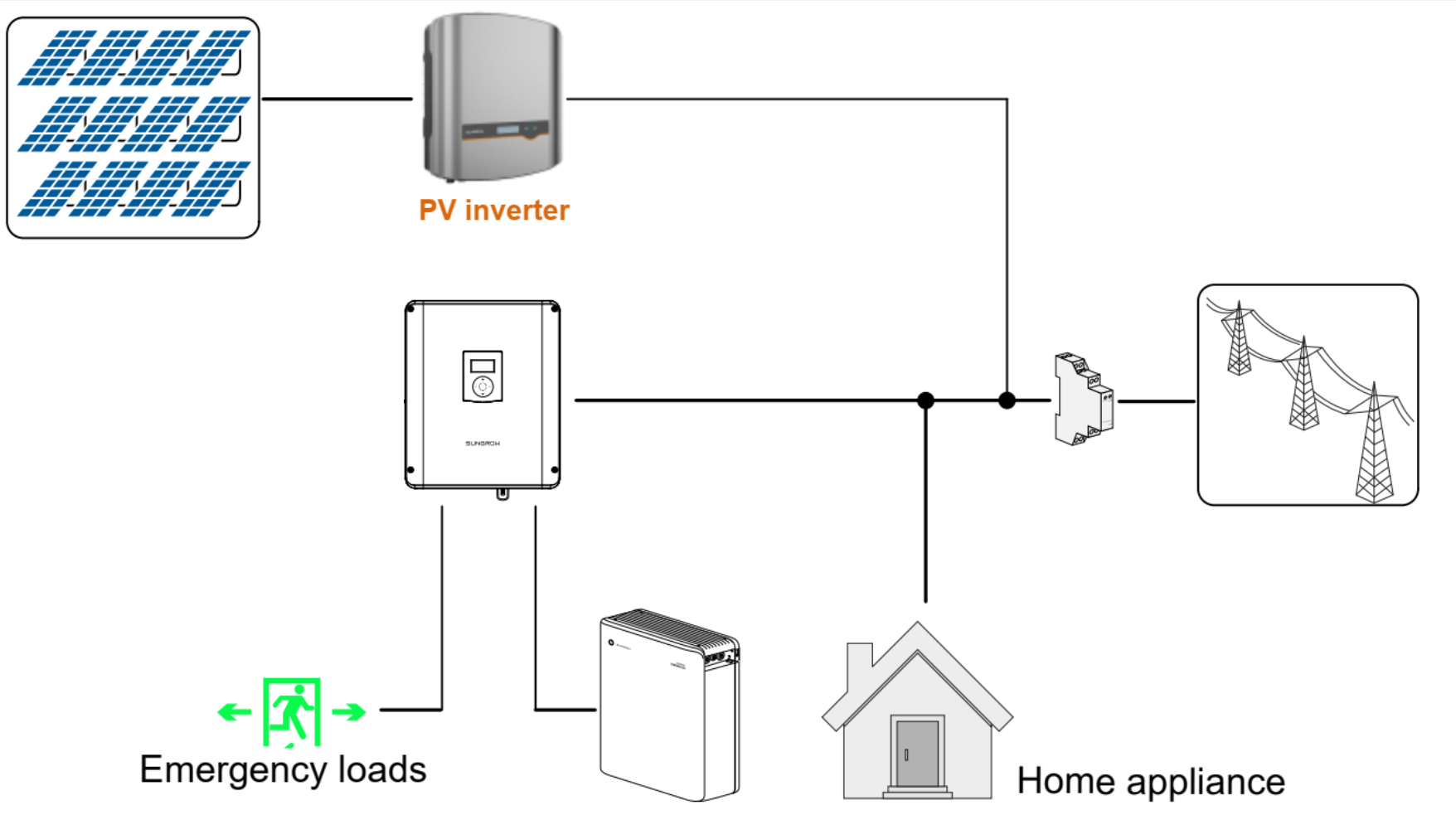
*Lead-Acid – Please contact Sungrow

Schematic Diagram



*Treat Emergency Load Circuits as an Essential Supply Sub-Board

Retrofitting



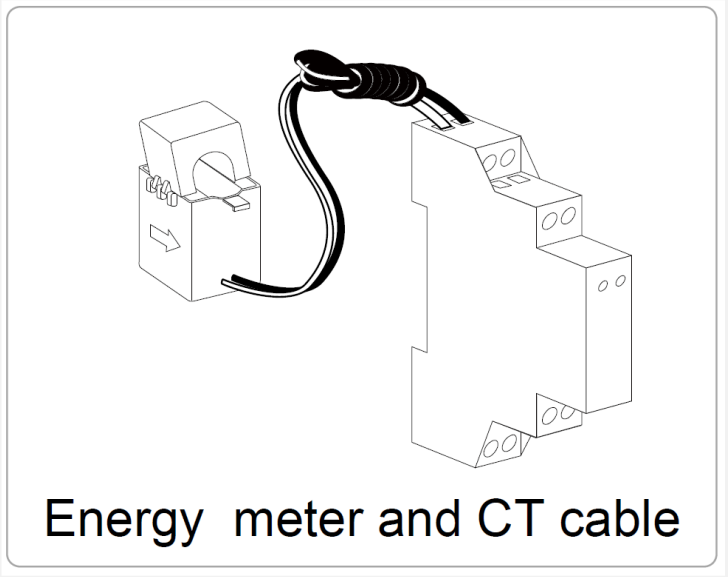
Battery will also charge from surplus AC energy from 3rd party inverter.

Can charge from both AC and DC coupling.

SYSTEM COMPONENTS

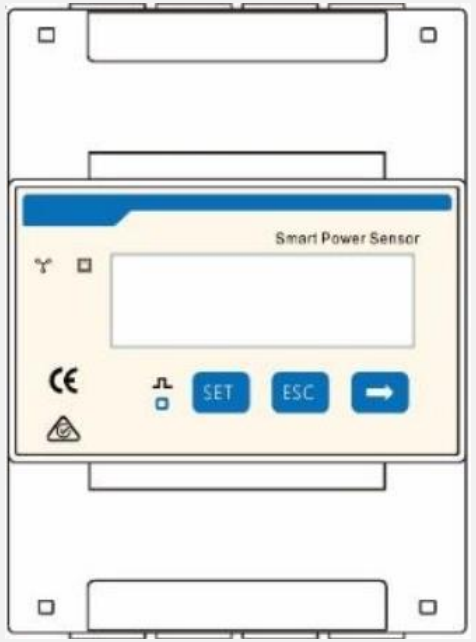
Energy Meter

- The Sungrow **Energy Meter** is central to the control system and controls battery charging, Export limitation, and provides load and import/export data.
- It is easy to install.
- It must be installed in the main switchboard.
- It must be on the ***same phase*** as the inverter.



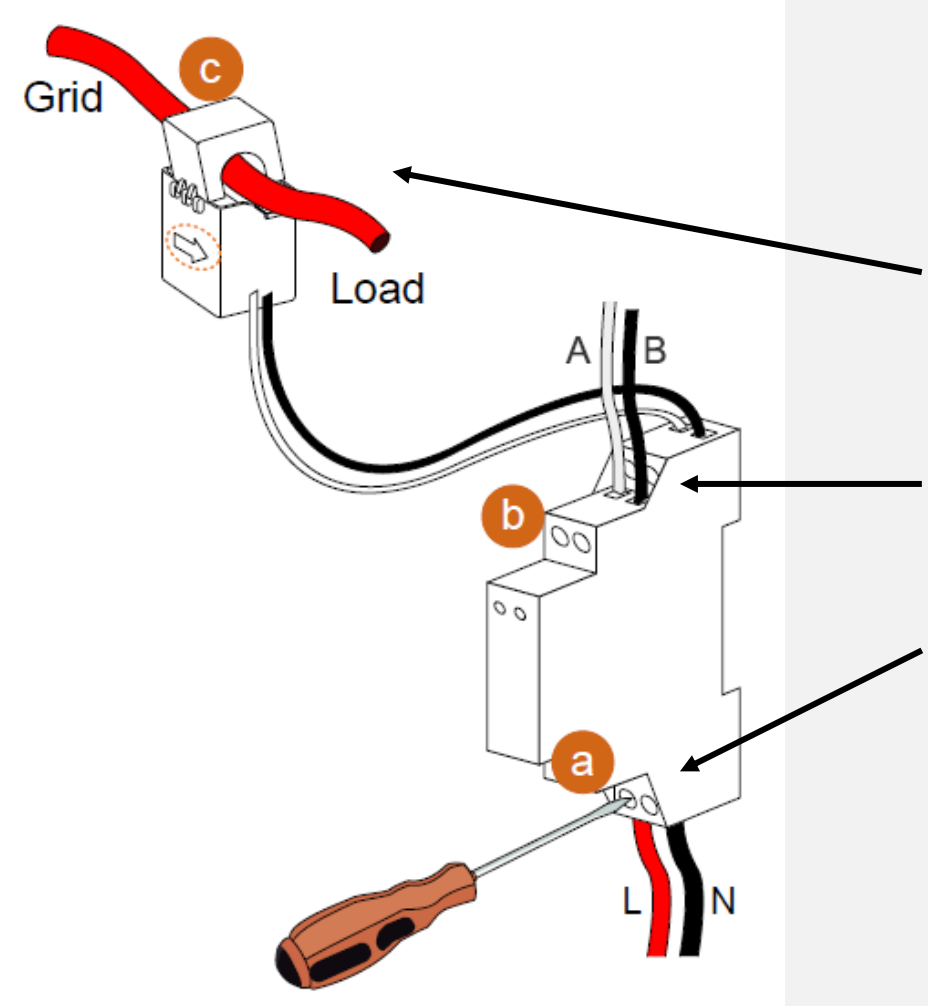
- Alternatively, if a 3-phase meter* is used it allows for ‘net-metering’ i.e. battery will discharge into one phase to compensate for load on another phase

** 3-phase meter sold separately*



DTSU666

Meter Wiring

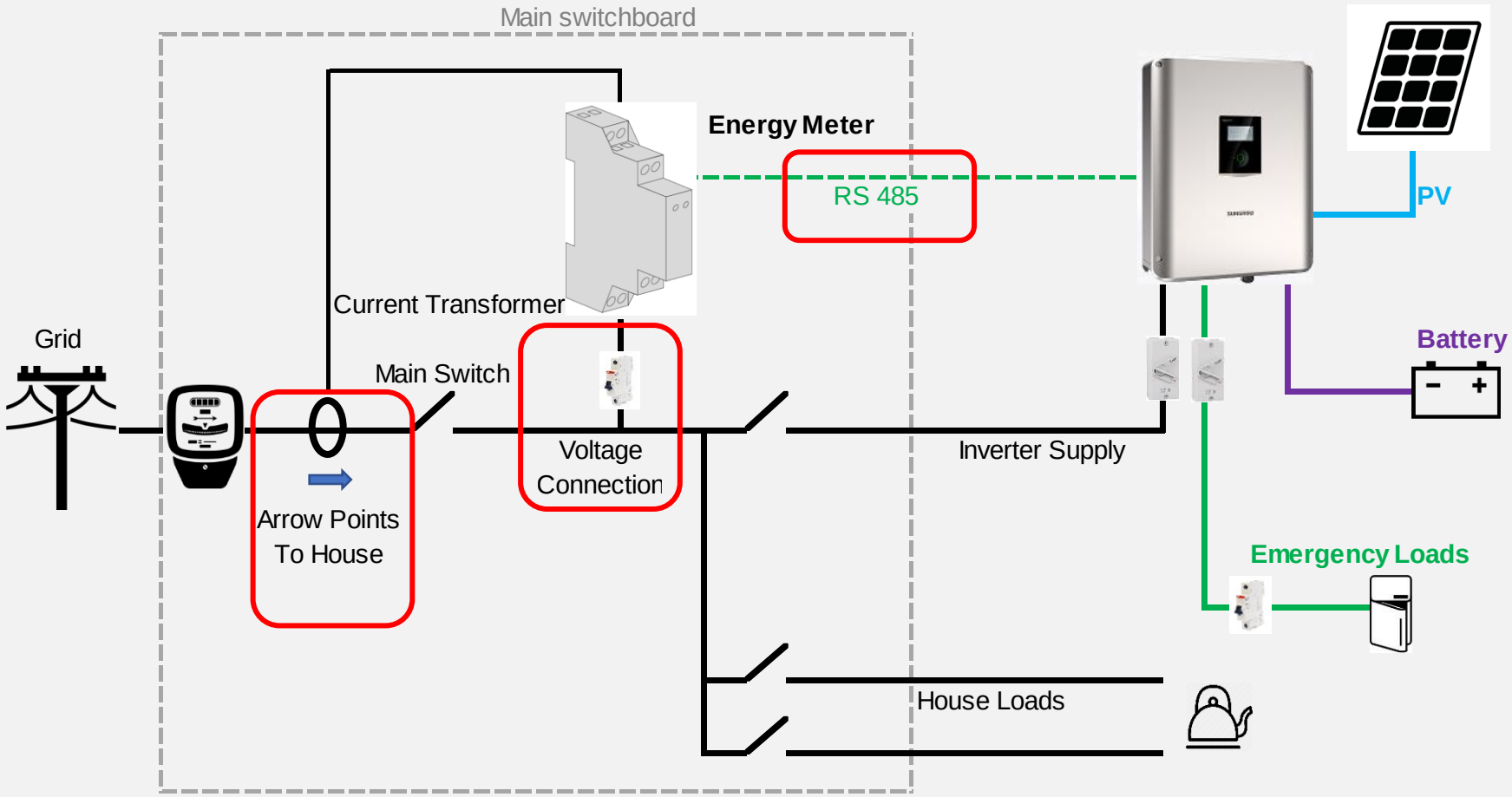


Clip the CT over the main active conductor supplying the house (same phase as inverter)

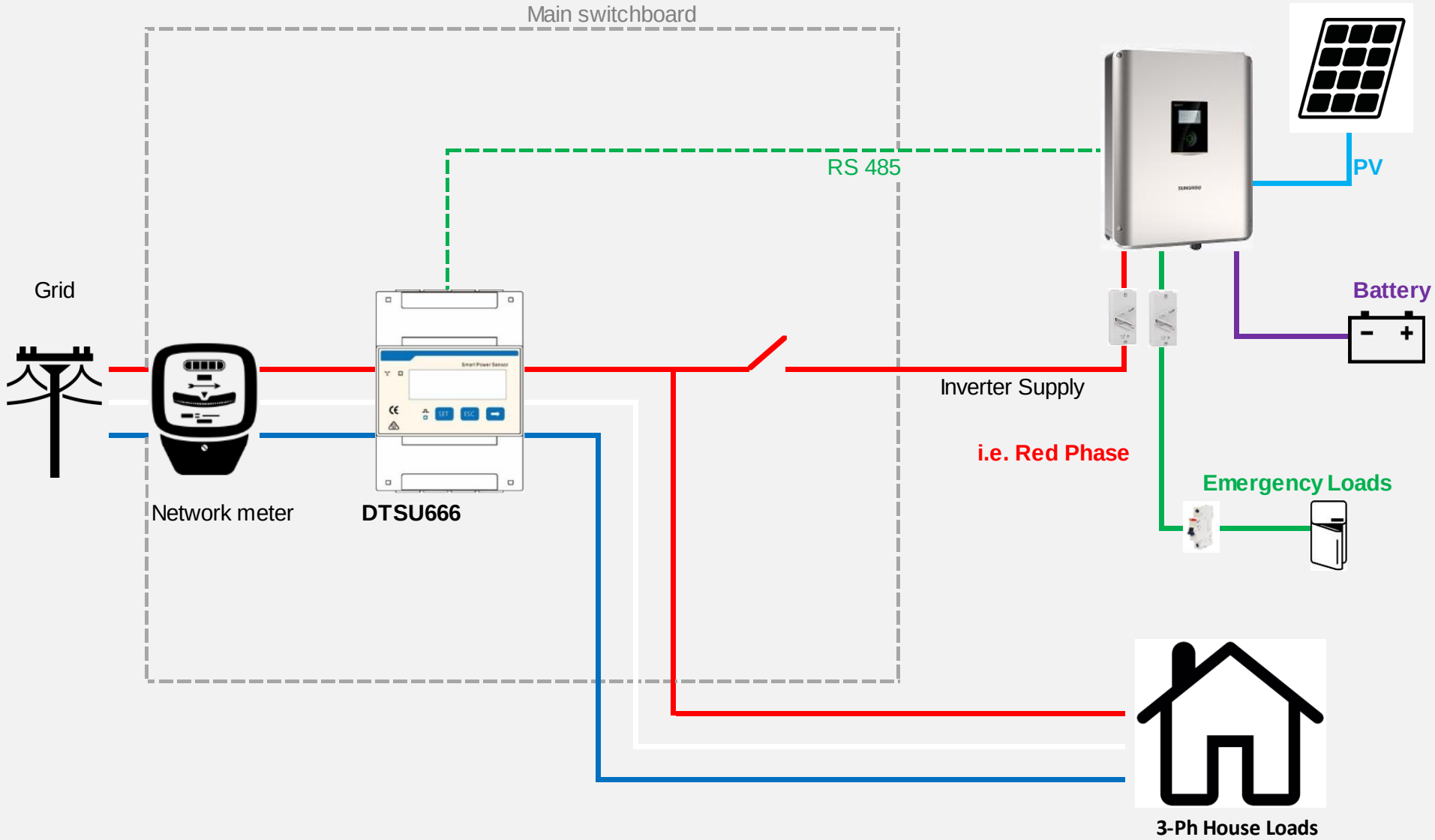
Connect the RS485 A+ to terminal 2, and RS485 B- to terminal 5

Connect the reference voltage Active to terminal 3, and Neutral to terminal 6

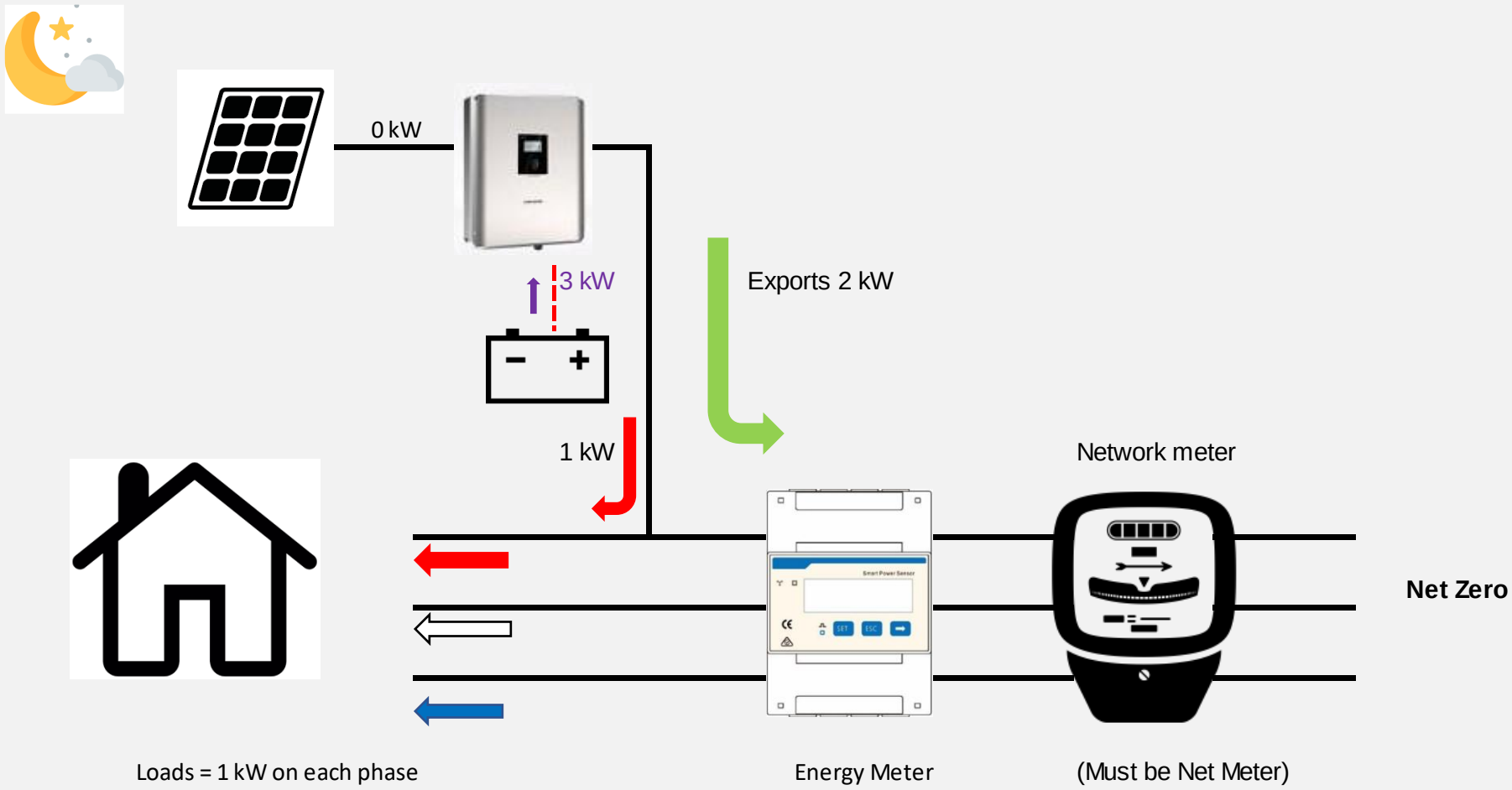
Meter Connection



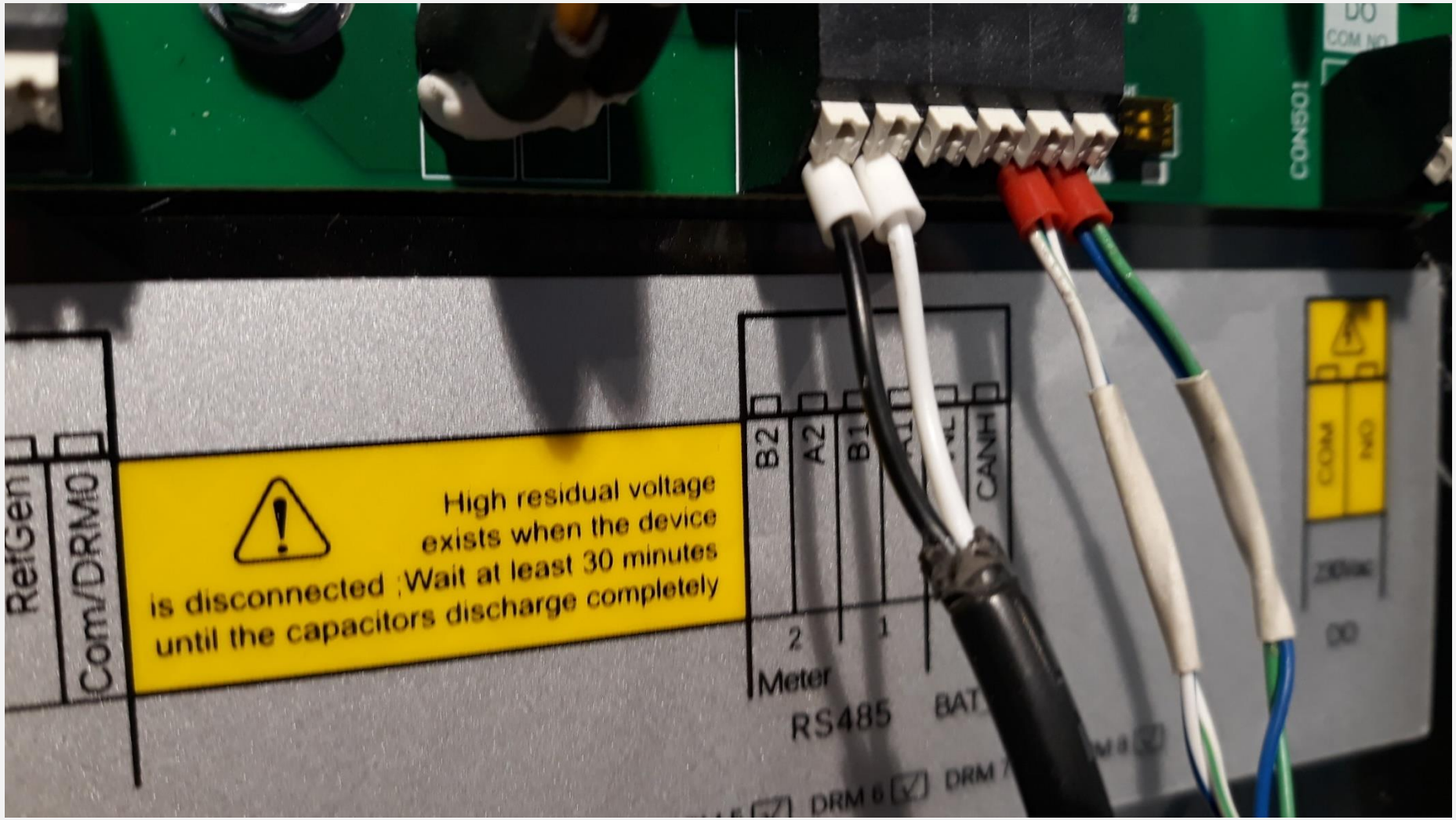
3-Phase meter schematic



Net metering: 3-Phase



RS485 connections inside inverter

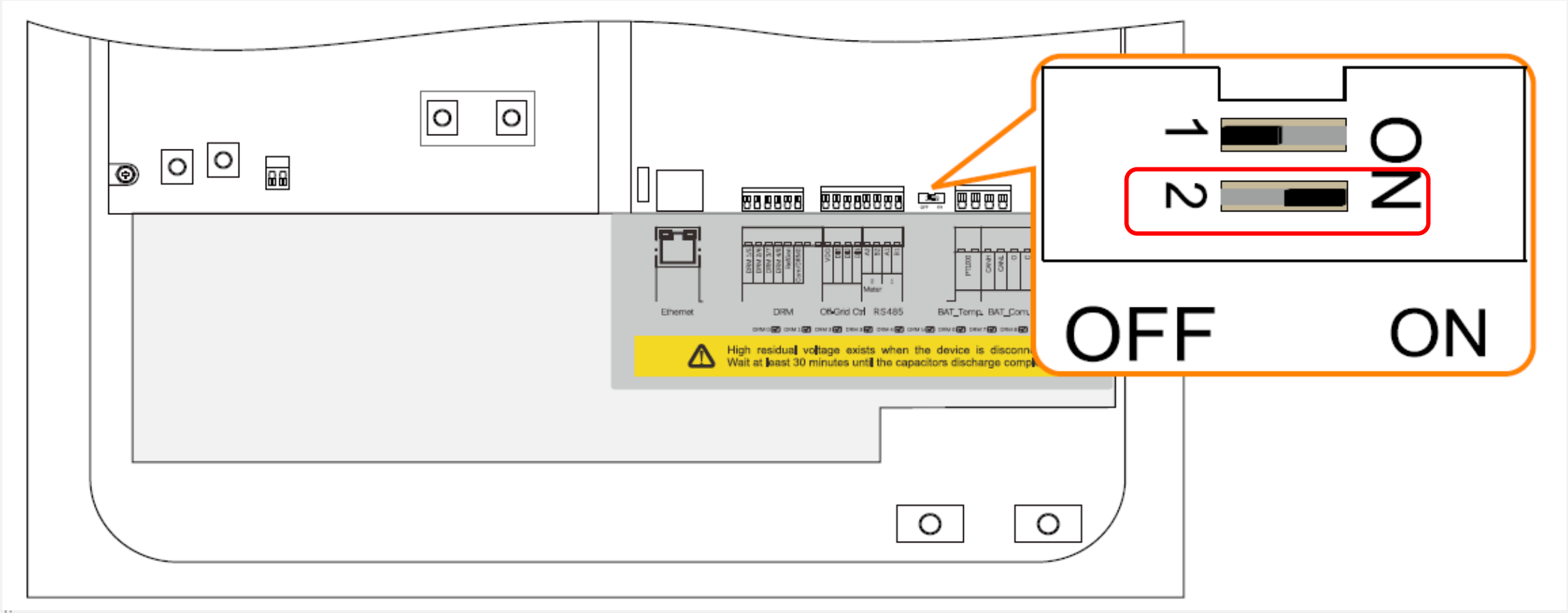


Connect to A2 and B2

Meter Cable Length >50m

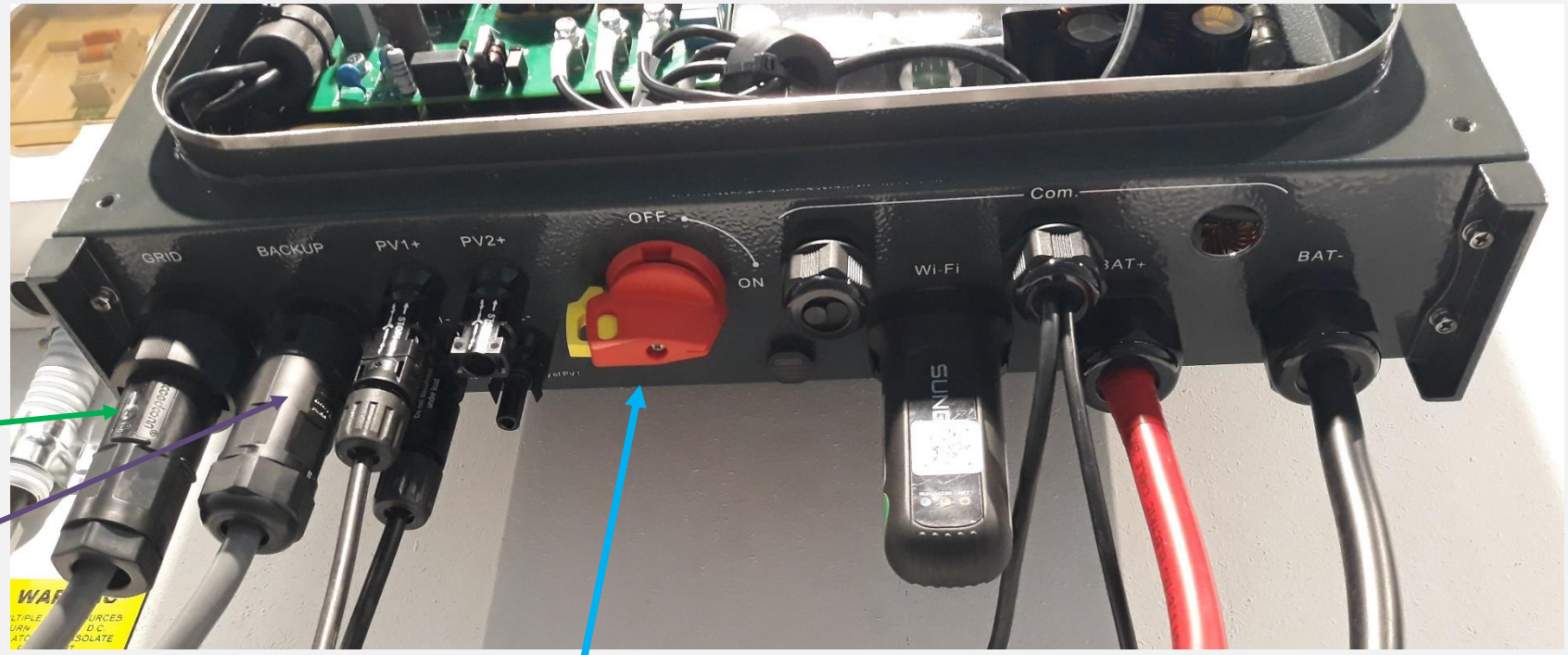
If the distance between the Meter and the Inverter is more than 50m:

- Use shielded twisted pair (RS485) cable of minimum 0.75mm csa.
- Set the 120 Ohm terminator resistor (No. 2) switch to ‘On’



Connecting the AC and DC

All the necessary plugs are included



Grid Supply

Backup Output

Built-in DC isolator

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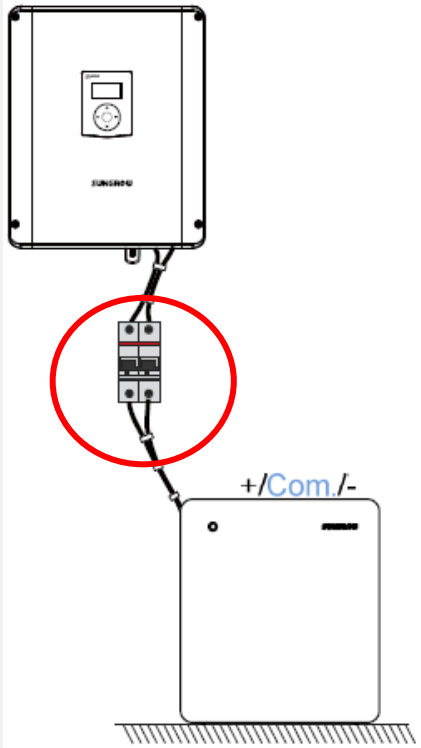
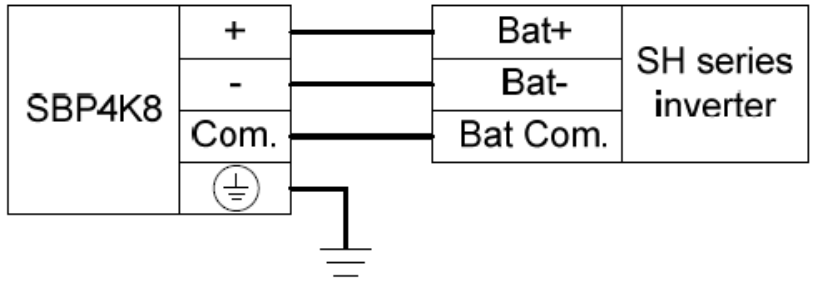
BATTERY INSTALL
(SUNGROW SBP4K8)

Cabling Specification (SBP4K8)

- The power cables must be 16mm – 25mm
- Max cable length = 3m
- There must be an appropriate disconnection device between the battery and inverter.

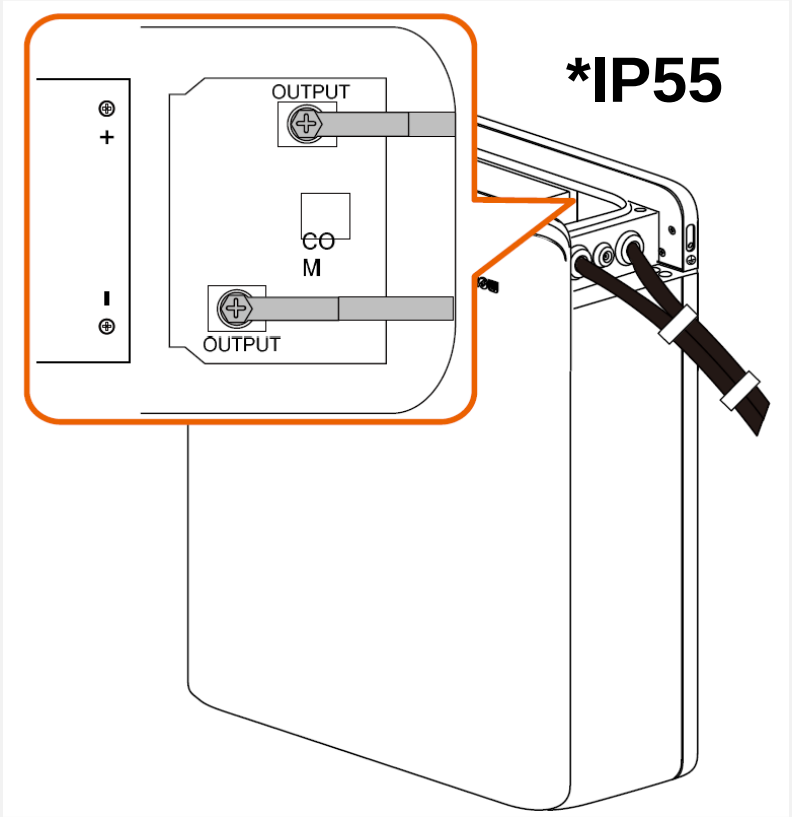


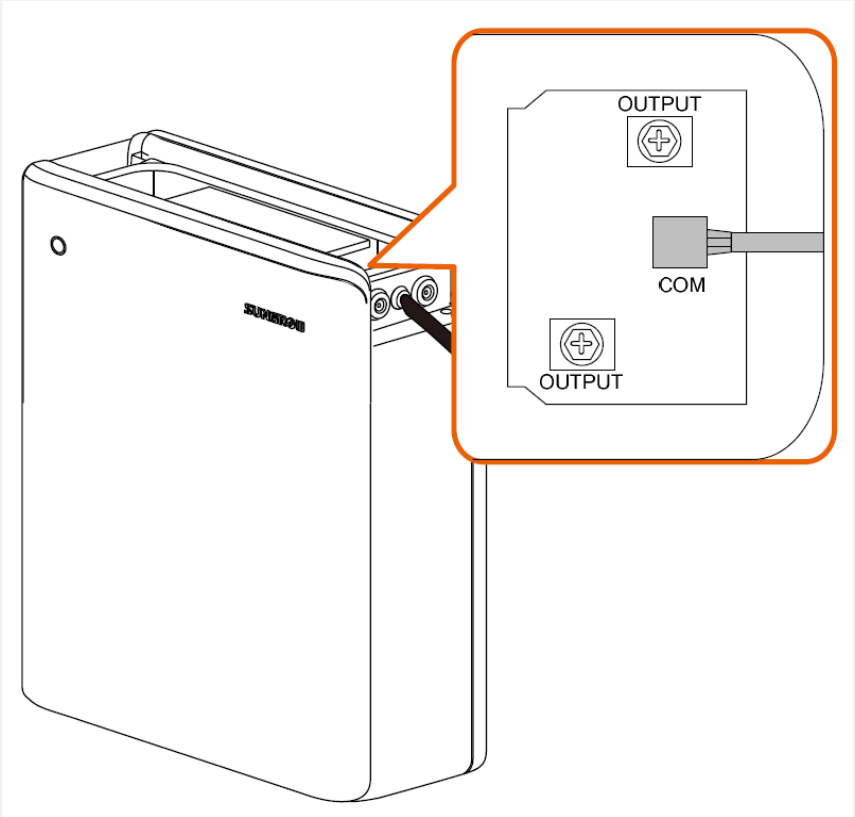
Wiring overview between the battery and the inverter

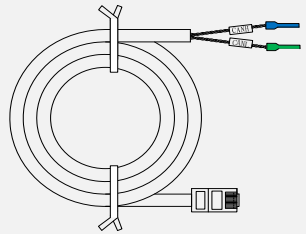


It is highly recommended to use colour-coded heat shrink tubing or similar for polarity identification.

Battery Connection



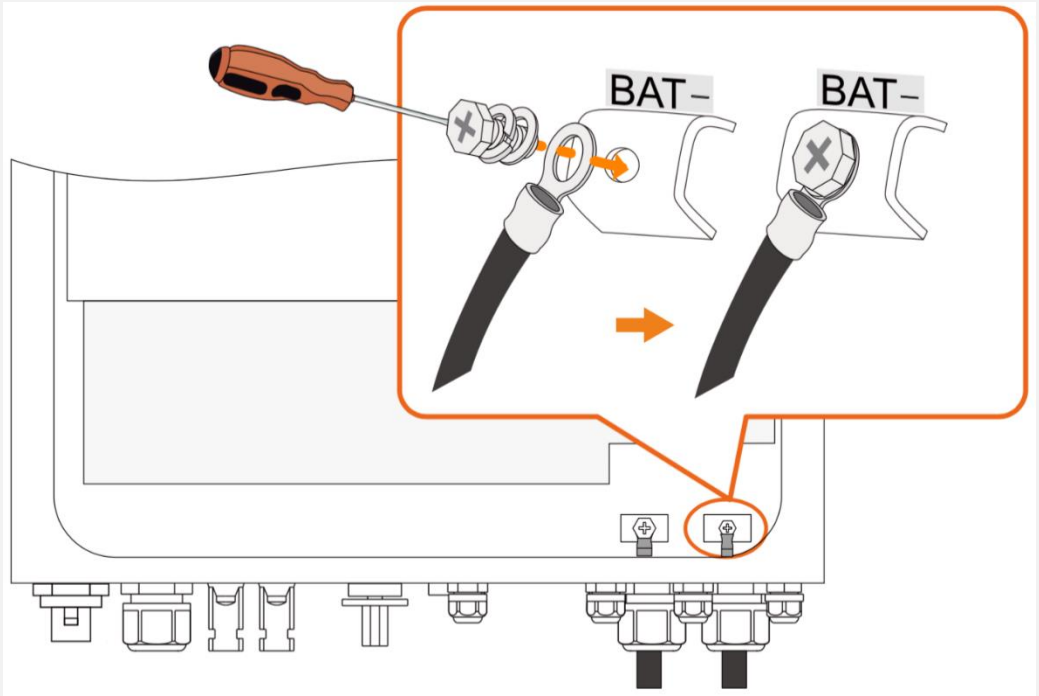




** Communication Cable is supplied with the package*

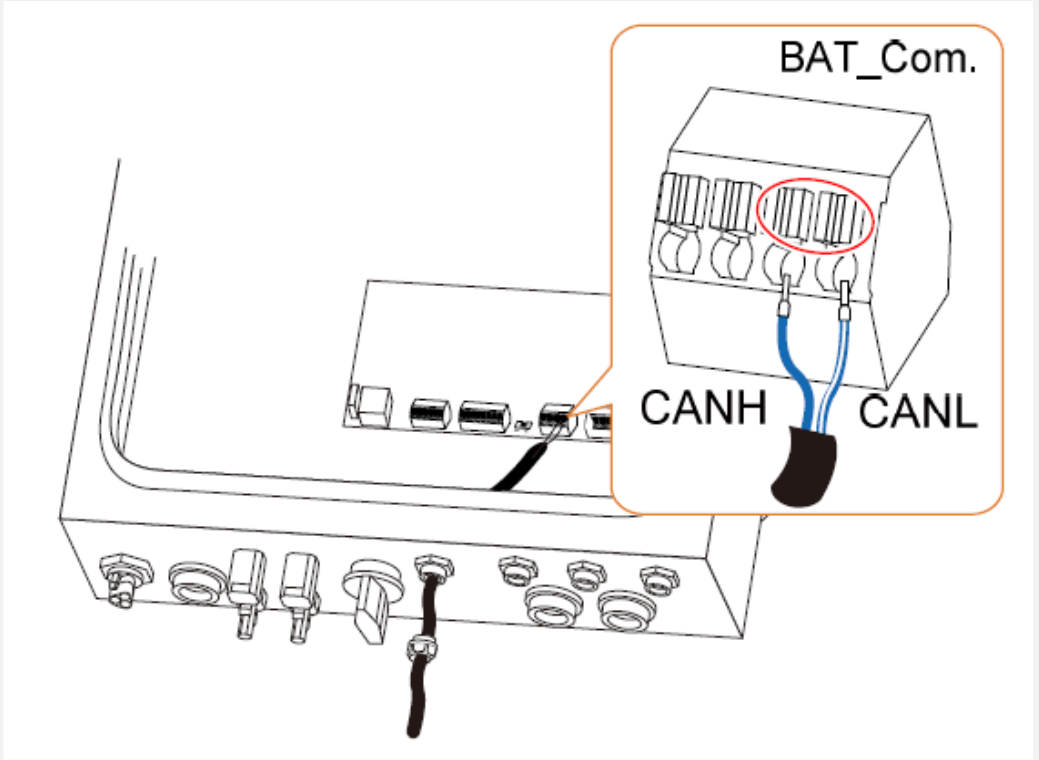
Battery Connection

- Install electrical cables
- Use the correct crimp lugs (supplied)
- Use the correct crimp tool



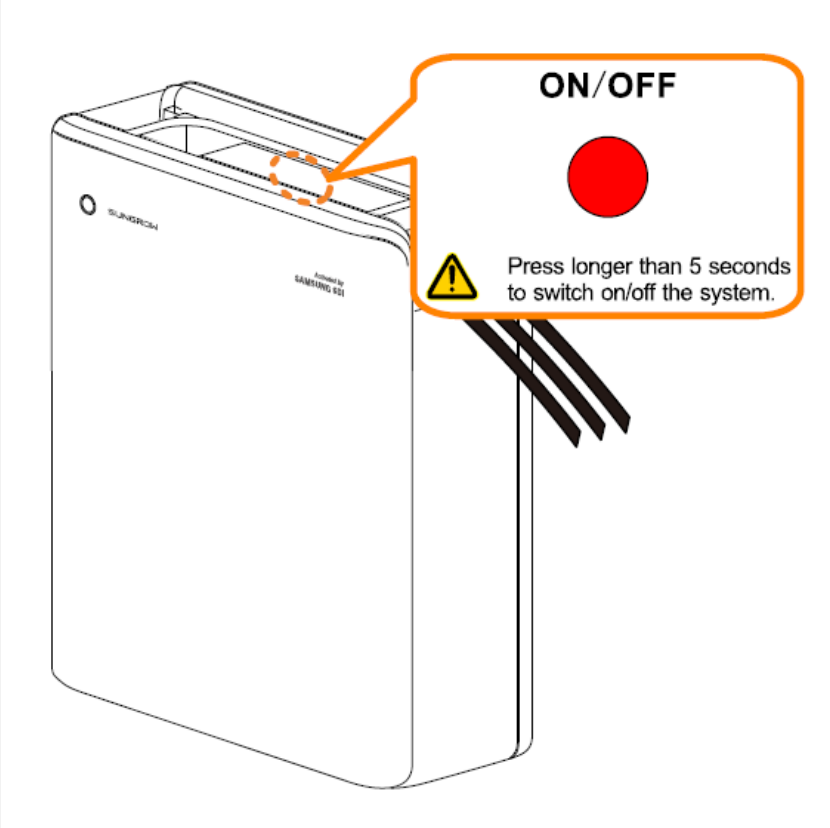
SH5K-30
Hybrid Inverter

- Install the communication cable

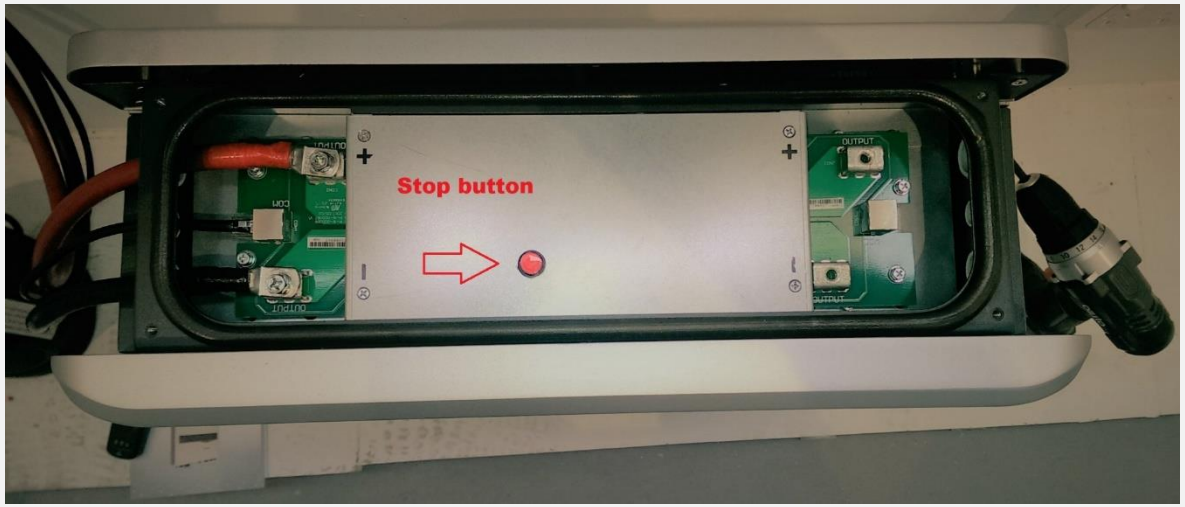


SH5K-30
Hybrid Inverter

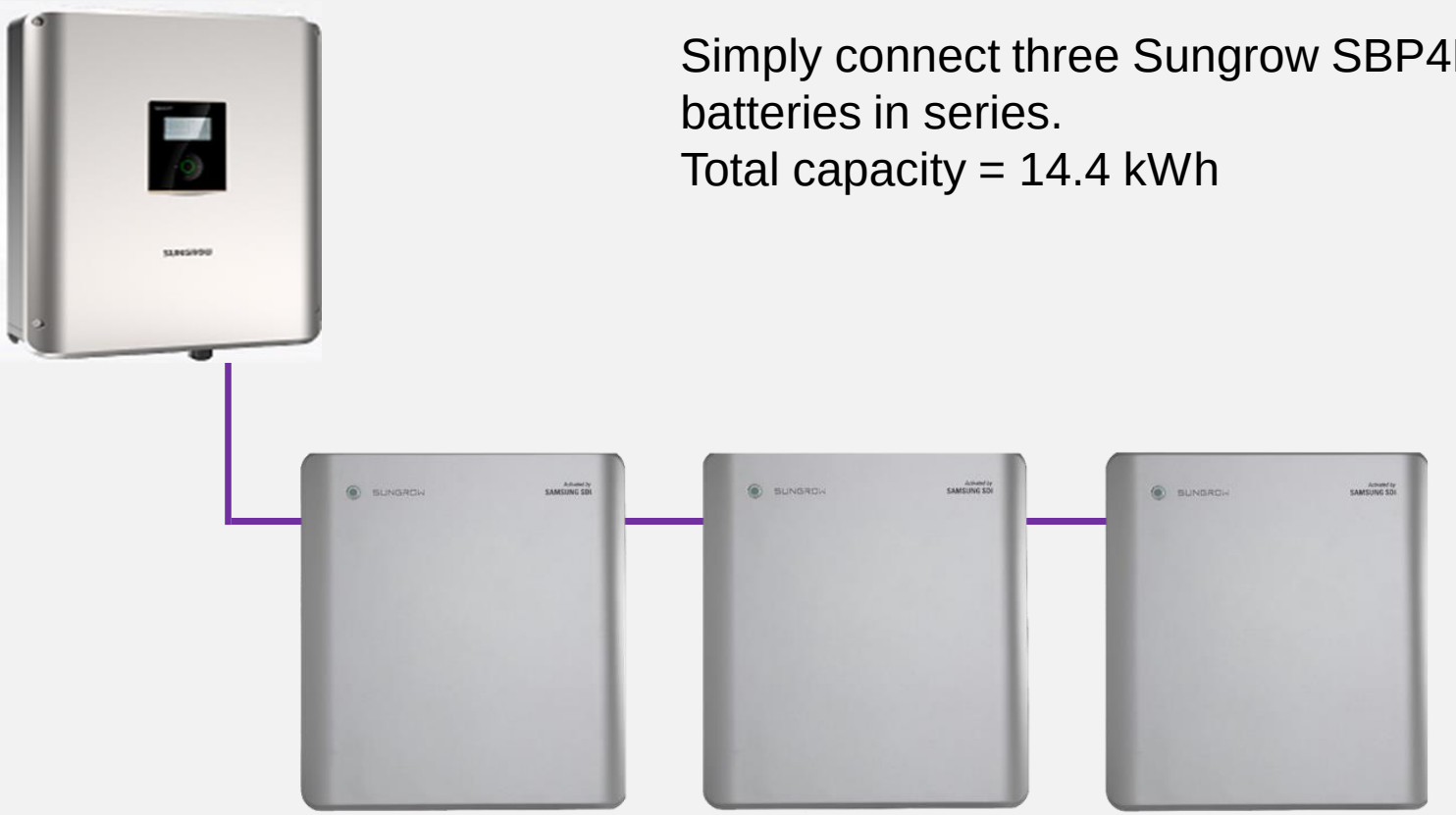
- The inverter will automatically ON / OFF the battery.
- The battery can also be manually switched ON or OFF by pressing and holding the RED button for 5 seconds.



Voltage range (open circuit) should be 44.8 – 58.1 VDC



Example of a 3 Battery System



Simply connect three Sungrow SBP4K8 batteries in series.
Total capacity = 14.4 kWh

COMMISSIONING

Commissioning Process

The entire commissioning process is done via the front touchpad.
It can be done in under a minute.
There are 4 parts to the process:

1. Country / Grid setting
2. Existing Inverter
    1. (Export Limitation)
3. Time and Date
4. Backup Setting
    1. (Reserve Capacity)

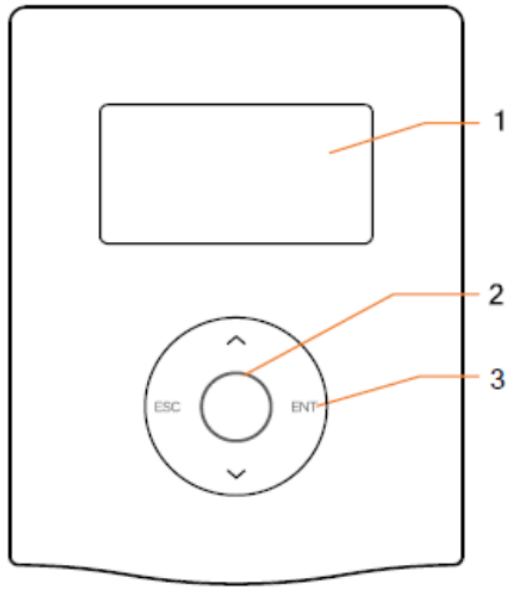
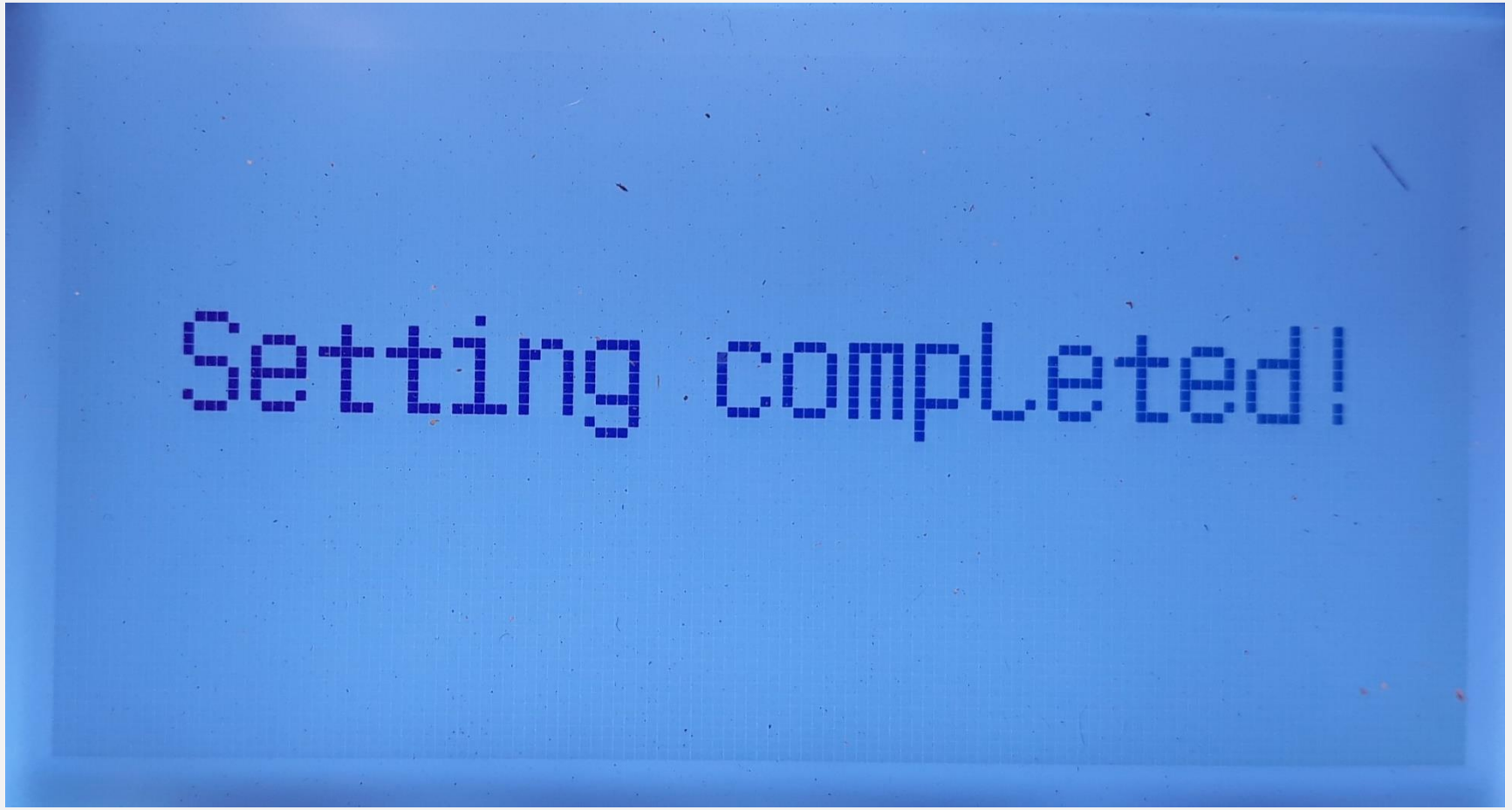


Fig. 2-3 LCD Display Panel

1. Setting the country / grid code

All Sungrow inverters come into the country set to AU default
You can also set the local grid guard code for your region

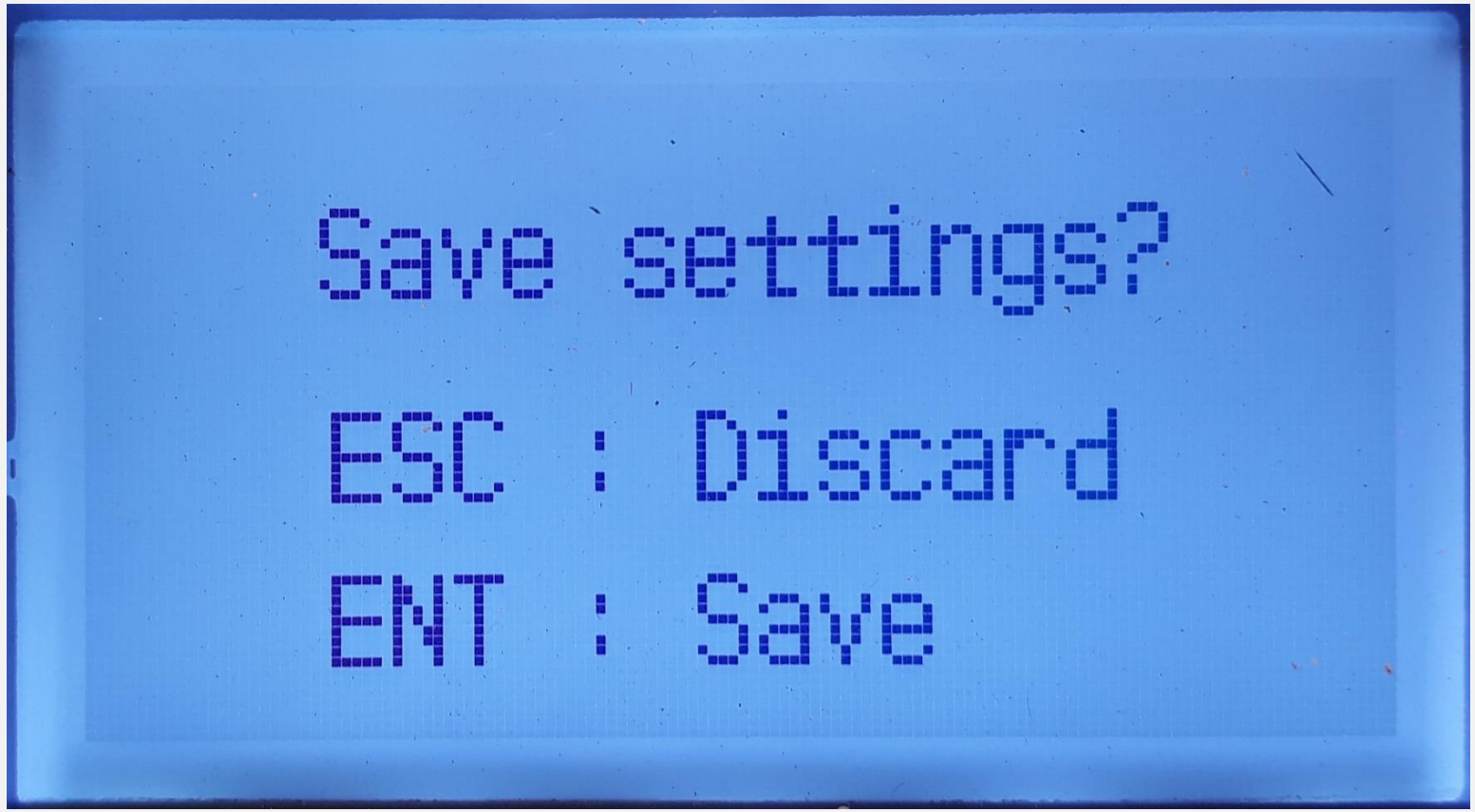


2. Existing Inverter

If there is an existing inverter on the same phase, it must be enabled for AC charging (vital on retrofit)
Enable the existing inverter
Enter the max watts AC of the inverter(s).
You can set the export limit here (default is 5000 watts)
Don’t forget to save.
The following step allows you to set the export if there is not existing setting enabled.

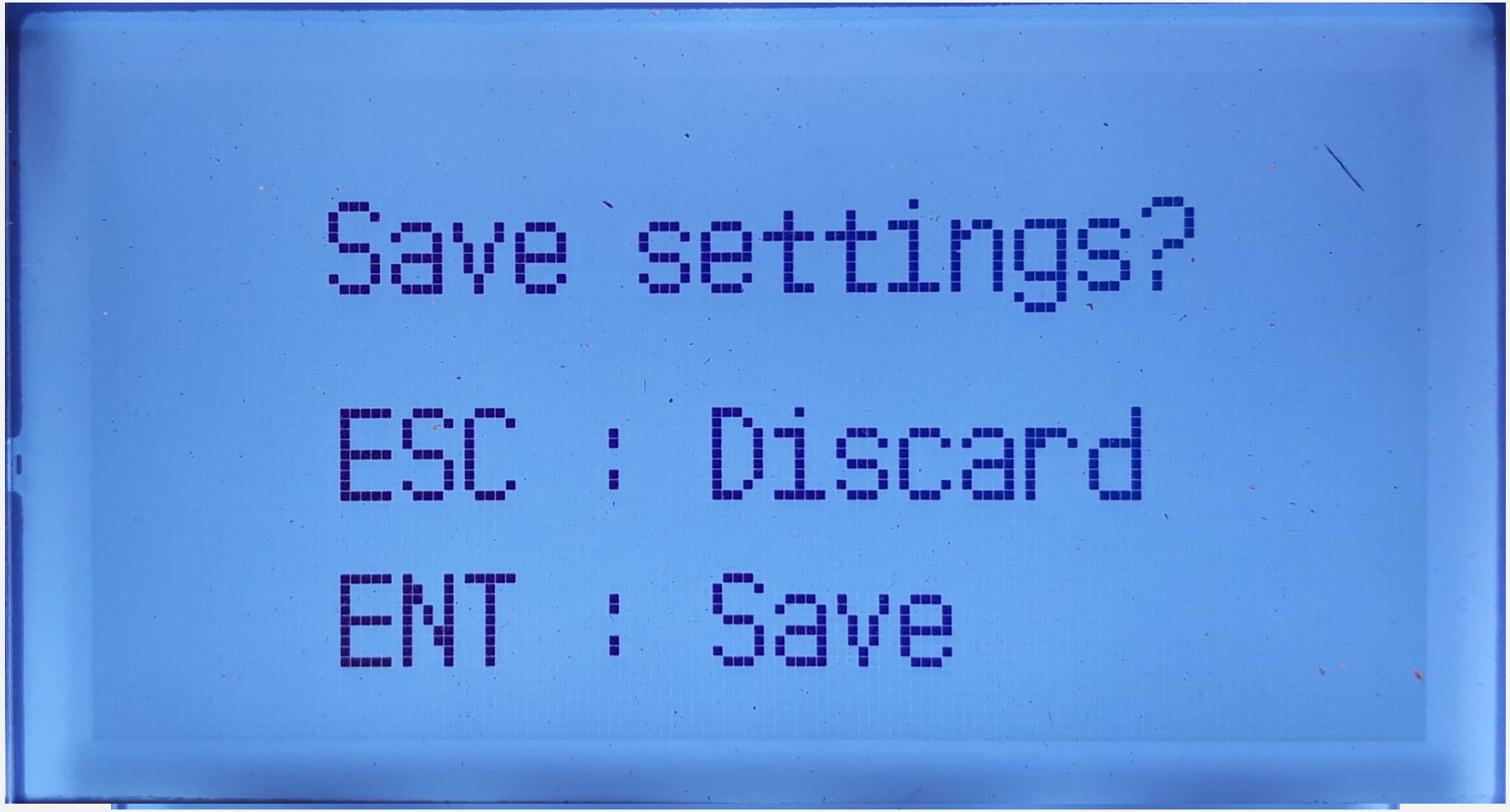
3. Set the Time and Date

As there is a battery discharge time setting, and the inverter needs to synchronise with the iSolarCloud, the time and date must be set.
Save and Exit



4. Backup Setting

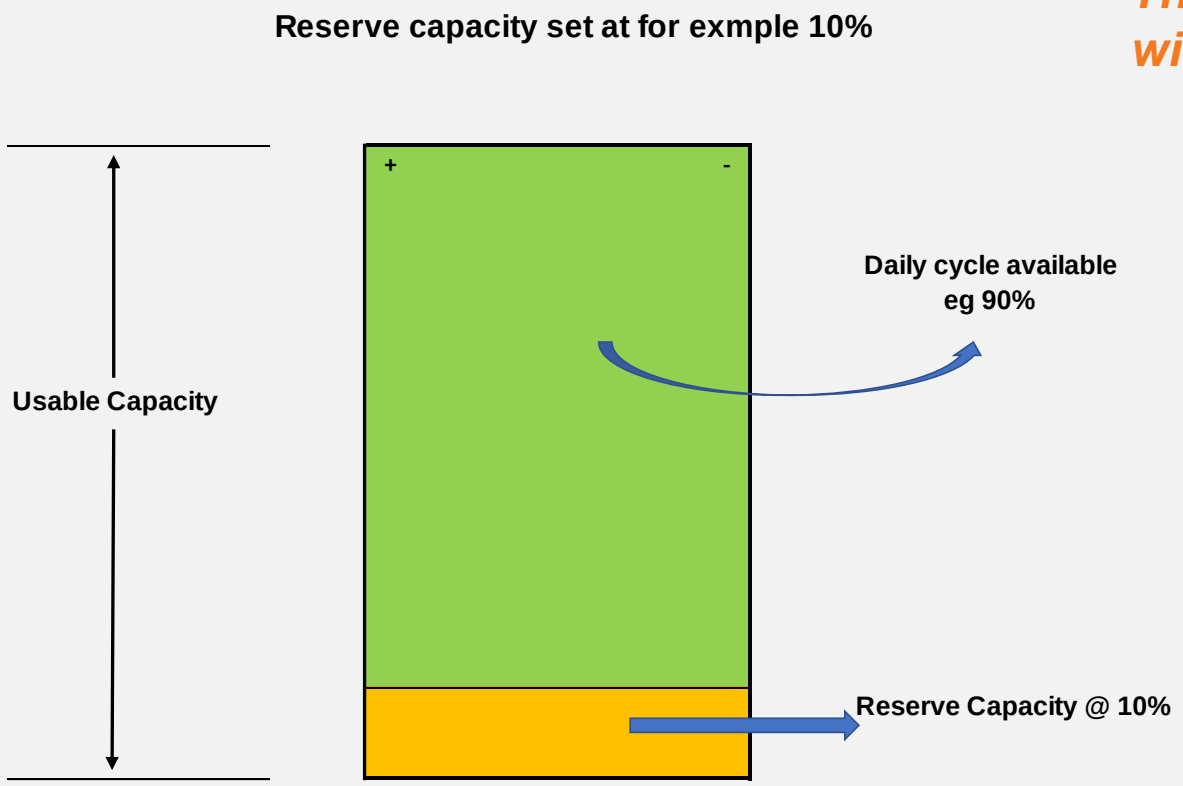
The backup setting is disabled by default.
If you have connected emergency circuits you will need to enable this feature
You will also be able to set a “reserved Capacity” if a battery is connected
The default is 000% but it can be set at anything up to 100%



What is Reserved Capacity ?

- Setting a ‘Reserved Capacity’ shall ensure that the battery retains the set charge to be available ‘only’ in the event of a blackout.

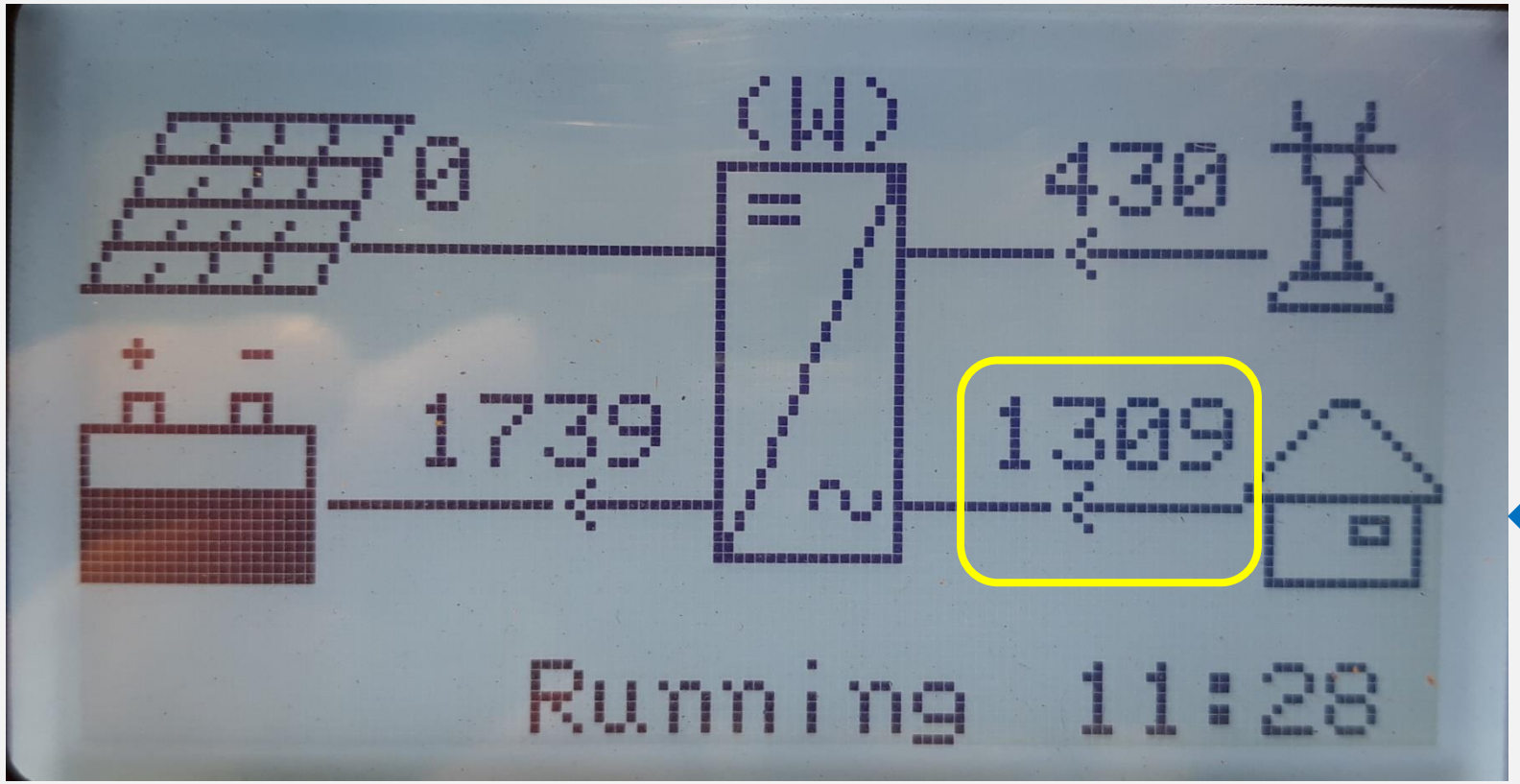
The Sungrow SH5K-30 will ‘BLACKSTART’



Save and Exit

Rertofit Display

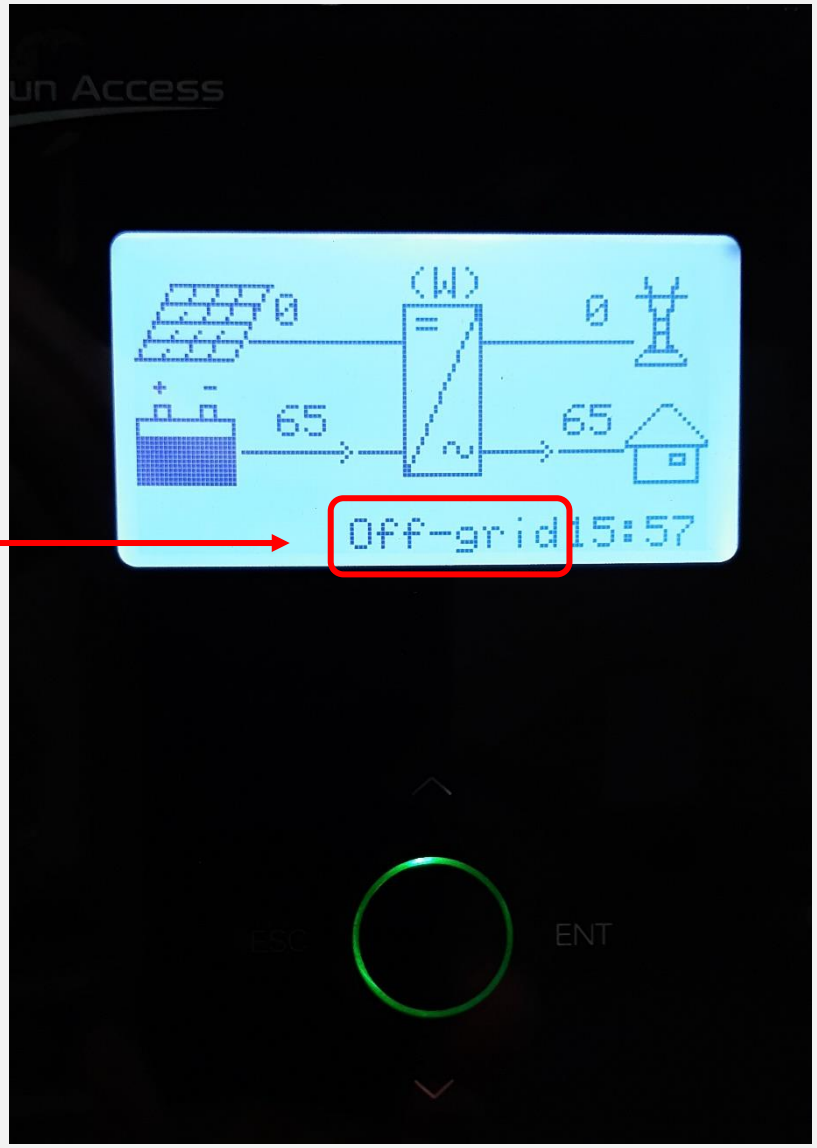
- Existing System must be enabled in the settings to charge via the AC coupling.
- Energy flow appears to come ‘from’ the house.



Off-Grid Mode

- When the Grid Supply is OFF, an alarm will sound briefly, and after 20 milliseconds the inverter will switch over to ’Off-Grid’ mode.
- Make sure the connected emergency loads do not exceed 3,000 Watts.

The LCD screen should read Off-grid



Further Information

For further information and videos, please visit our service web site
https://service.sungrowpower.com.au/

You may also reach tech support via:

Email: service@sungrowpower.com.au
Hotline: 1800 786 476 (business hours)

AU Team

Thank you

- 2012 Founded in
- 15+ Lovely Members
- 500MW Being Installed in AU

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Thank You

Public