

## Connection and settings to enable the EPS function

### 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.

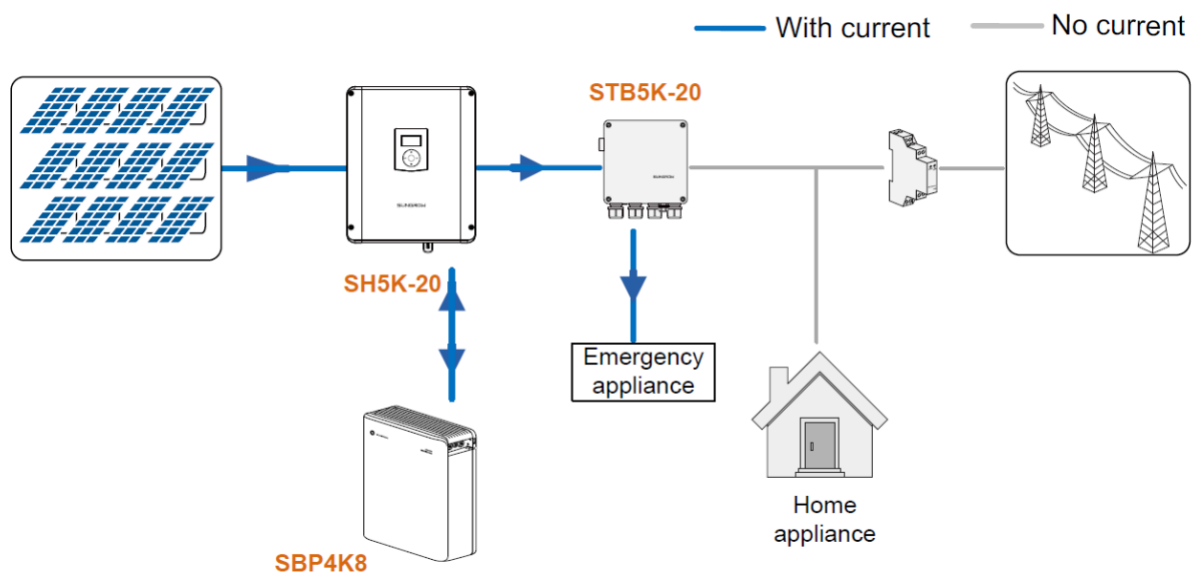
The purpose of the EPS box is to enable certain house circuits to remain on in the event of a power failure.

It is necessary first to decide which household appliances should be included in the EPS circuit and carry out any required re-wiring. For example, the customer may want the lights, fridge and Internet to remain on.

Please bear in mind that:

- a) the maximum power from the battery in the off-grid mode is 3000 Watts, and
- b) there must be PV and/or Battery energy available.

The switchboard must be split between 'Essential' and 'Non-Essential' loads.



When the grid fails, the STB5K de-couples itself the inverter and the ‘Emergency Circuits, from the grid, and sends a signal to the inverter to run in ‘EPS’ mode. This takes a few seconds.

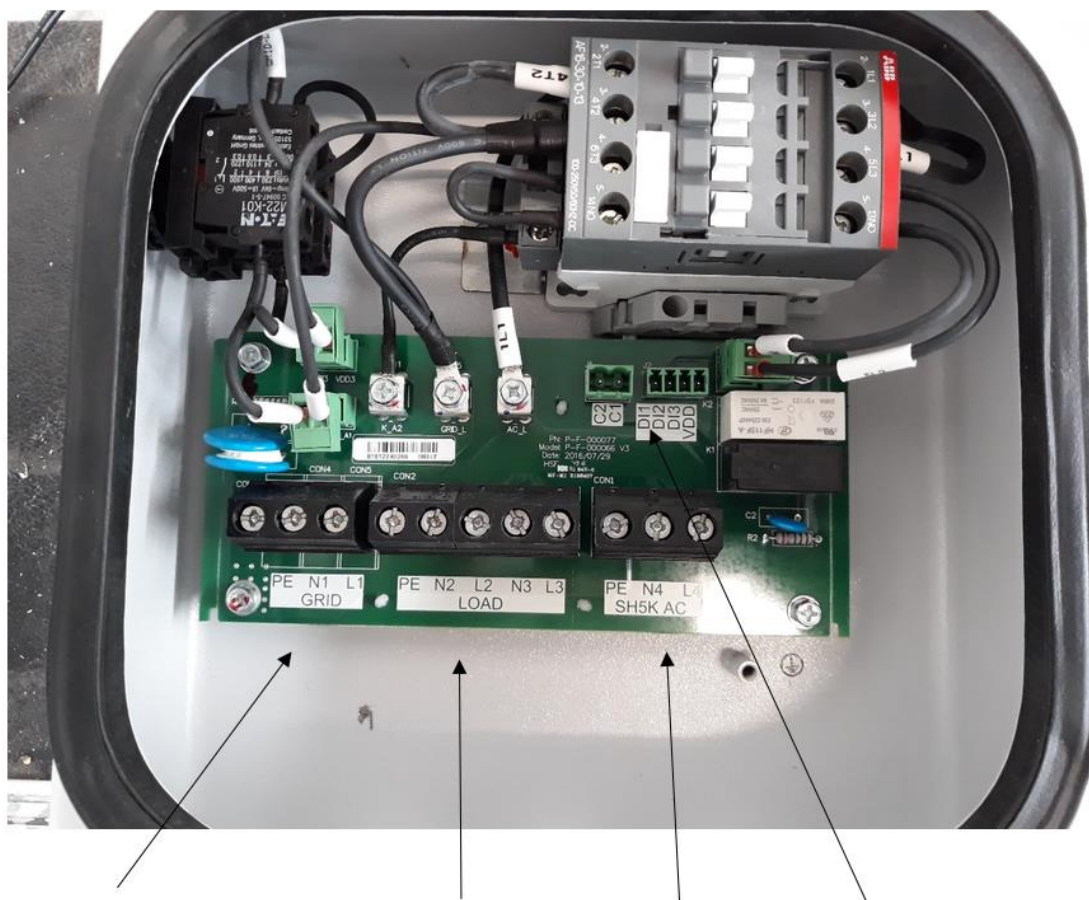
The inverter will then power the emergency loads from the PV and/or battery.

When the grid comes back on, the system detects grid voltage and sends a signal for the inverter to switch back to ‘Grid Connect’ mode, and the EPS box re-couples to the grid.

Once the inverter goes through ‘start up’, it syncs to the grid.

**The energy meter must be correctly connected for this operation to function correctly.**

There are a few basic rules which, if followed, will allow an easy and trouble-free installation of the STB5K-20.

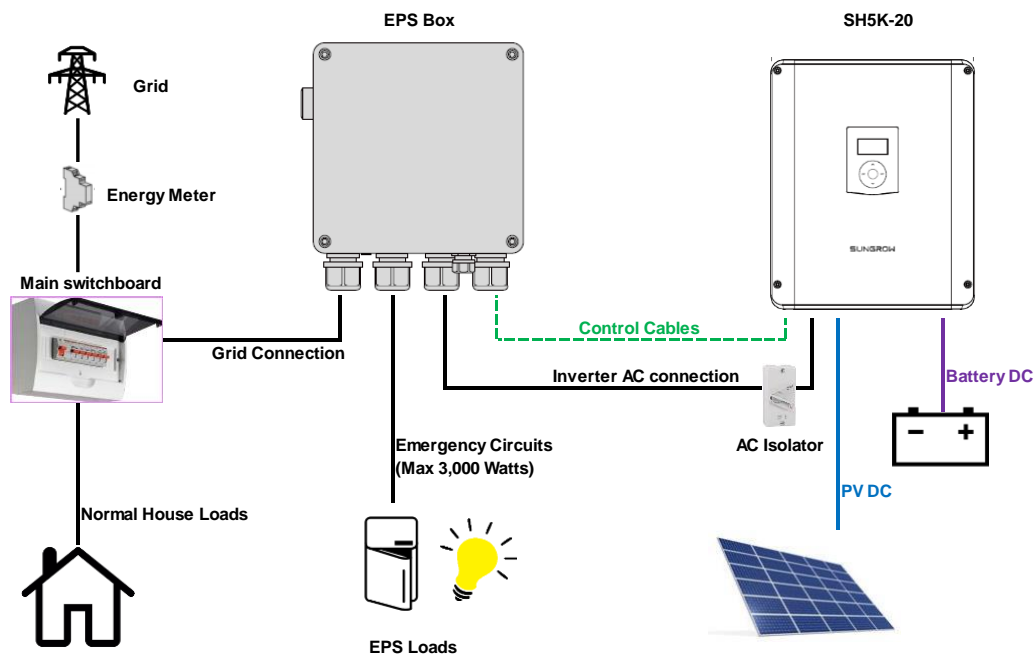


From Main Switchboard    To Emergency Loads    To Inverter    Control Cables

Treat the EPS, Emergency circuits, and the inverter as a ‘sub-board’ and follow the normal Electrical standards.

- The Sub-board supply from the main switchboard feeds to the EPS box.
- The EPS box connects to both the inverter and the emergency circuits on two dedicated outputs.
- The Emergency circuits supply connects to the emergency loads sub-board, and each circuit has its own circuit protection.
- The control cables connect between the STB5K and the Inverter.

**General EPS wiring:**

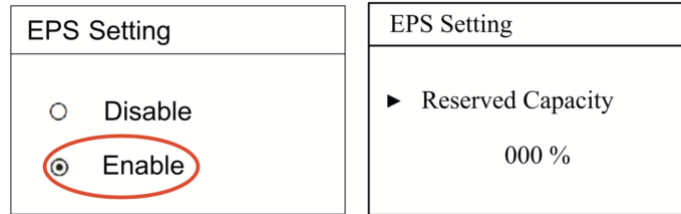


The Energy Meter must be located in the main switchboard to enable proper Grid sensing.

Always install an AC Isolator beside the inverter to disconnect the emergency circuits from the inverter 240V AC if the main switch is off (i.e. off-grid mode).

**Menu settings:**

In order for the unit to operate in off-grid mode, it must be enabled in the ‘settings’. The following must be set in the main menu.



The “Reserve Capacity” will quarantine a set amount of battery charge to be only available in off-grid mode. **Default is 000% which means all available capacity is used for normal cycle.**

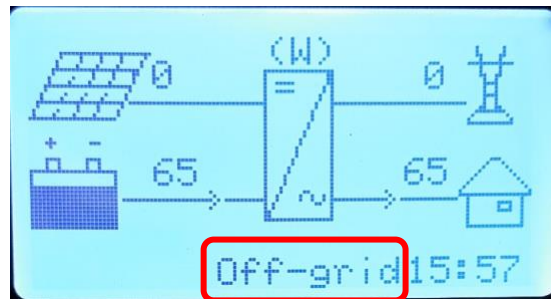
If it is important to the customer to always have energy available, set to desired %.

**Testing the EPS unit:**

Once everything has been wired and the settings done, test the EPS by pressing in the test button located on the top left corner of the EPS box. This simulates a blackout without interfering with the normal house loads.



After a few seconds, the changeover switch will operate, and the inverter will go into off-grid mode (an alarm will briefly sound). This will prove that the everything has been correctly connected, set, and is working properly.



Press the test button back out and normal grid operation will resume.

**Complete the test by switching off the main switch to the house to simulate blackout. You should get the same result.**

If it does not go into off-grid mode or cycles between the two, there is likely a wiring issue with the energy meter. This could be 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. Re-check the connections of the energy meter.

If the issue persists, please take photos testing on site and contact Sungrow Service Department on 1800 786 476.