

Grid Export & Battery Back-Up

The SP PRO Interactive Inverter Charger can be utilised in a variety of situations to meet the customer's needs beyond what can be provided by a PV string inverter. Customer may require:

- ✓ **Renewable export**
- ✓ **Operation when grid fails**
- ✓ **Reliable Supply**

How long can the SP PRO support the customer during grid failure?

The SP PRO Interactive Inverter Charger requires batteries (similar to a UPS) to operate. The number of hours the SP PRO is able to support the customer's needs during grid failure are determined by the capacity of the batteries, the renewable input (if installed) and the AC load power.

How does it work?

The SP PRO connects in between the meter and the site loads that are to be battery backed. The feed from the meter connects to the AC Source and the loads connect to the AC Load terminals in the SP PRO.

What else is required?

The SP PRO will keep the battery bank charged and ready whilst the grid is present. If adding renewable, it needs to be fed to the battery bank via a separate regulator.

The SP PRO uses the grid to keep the battery bank at the correct voltage when renewable is connected and without the grid it is unable to perform this function. The separate regulator takes over this function during times of grid disturbance.

Does the SP PRO have all of the required certifications?

The same regulations apply to a SP PRO as to a string inverter. The SP PRO range has AS4777 certification and certificate of suitability. Labelling requirements are similar with the addition of indicating which switch board contains battery backed (UPS type) circuits.

Figure 1 shows the operation under normal grid conditions, electricity from solar is fed to charge the batteries and to the house load, any excess is then exported to the grid.

Figure 2 displays operation during Grid failure. It shows the system using the batteries and the renewable only, to supply the house load whilst the grid is not operating.

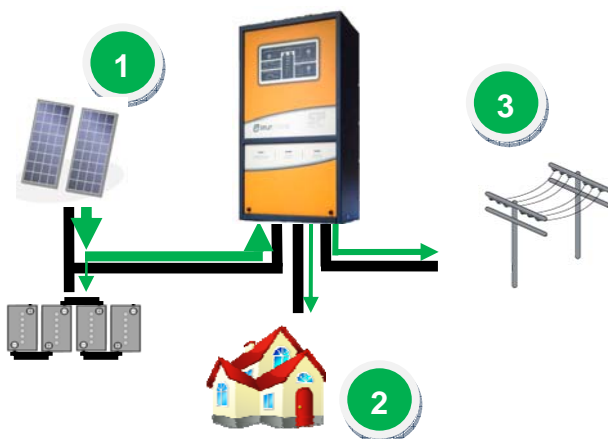


Figure 1 Normal Grid Operation

- 1) Solar charges batteries
- 2) Solar feeds house load, then
- 3) Solar exports excess to grid

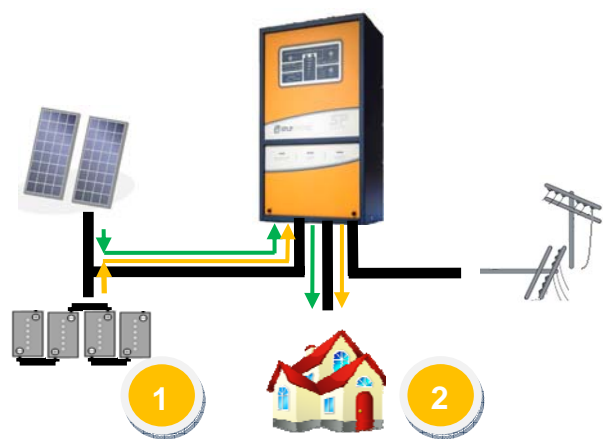


Figure 2 Grid Failure Operation

- 1) Solar charges batteries
- 2) Solar and batteries supply house load only

What does the customer need to decide?

The customer needs to choose which loads are to be protected by battery back-up. This may in fact be the whole house or simply particular appliances like lighting, refrigeration and air conditioning.

The customer needs to decide for how long the chosen loads are to remain on during a grid disturbance. This will determine the required battery size. The frequency and duration of the grid disturbances should also come into consideration, together with the capacity generated by the renewable energy source (if installed).

Wiring Diagram

Figure 3 provides a detailed wiring diagram showing both battery backed and non-battery backed loads and a renewable input.

Questions

For further information regarding the SP PRO Interactive Inverter Charger please contact the Selectronic team on (03) 9727 6600 or email to sales@selectronic.com.au.

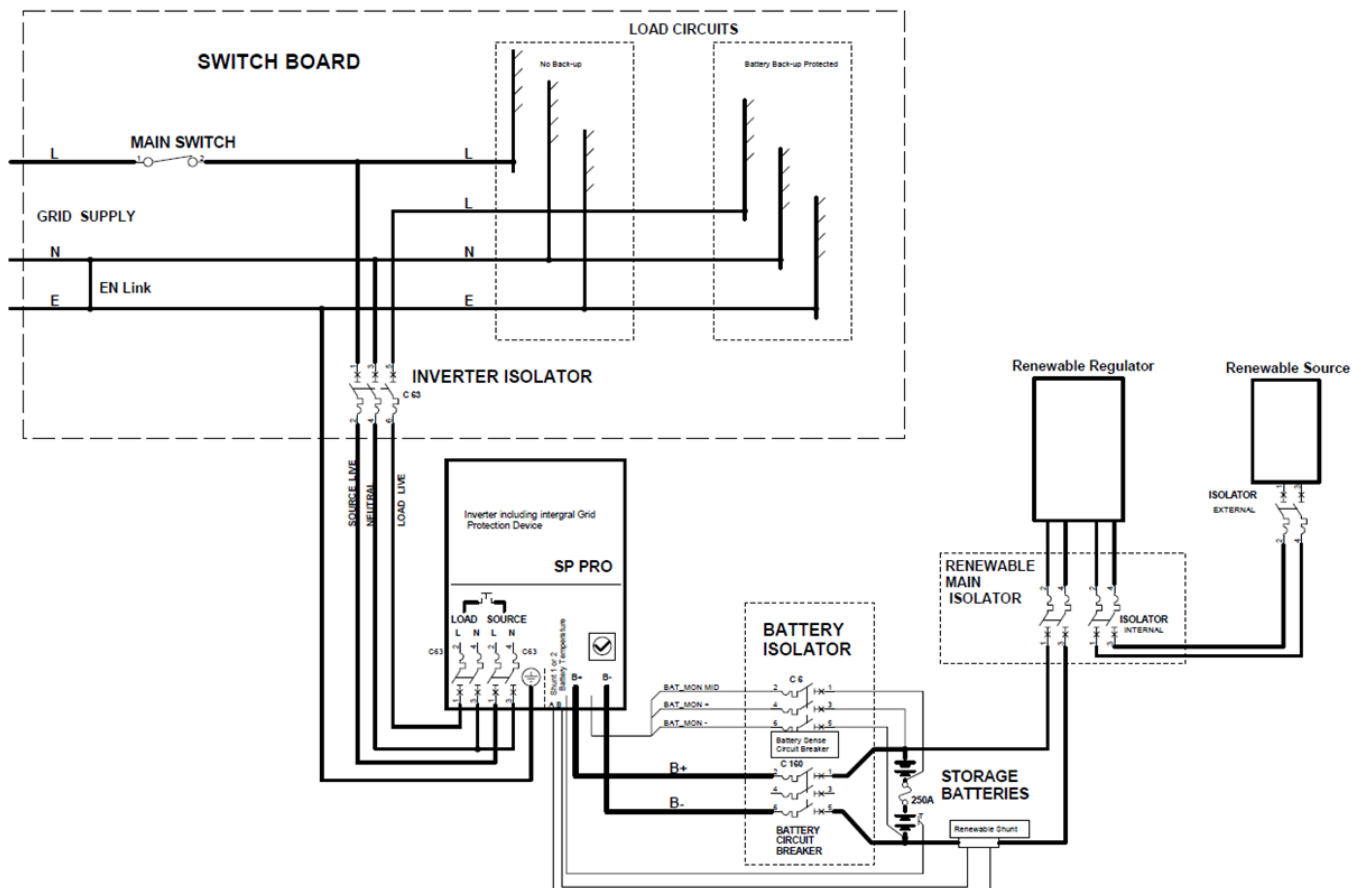


Figure 3 Wiring Diagram

- Please note:
- Inverter Isolator is a 63A three pole circuit breaker.
 - Neutral and Earth remain connected to Load circuits regardless of position of Inverter Isolator.
 - Renewable is measured through DC Shunt.