

Welcome to your new Invicta Lithium LiFePO₄ Battery.

Please read the instructions and warning on this card carefully to ensure you get the most out of your battery.

Warnings

- Keep battery away from exposure to heat, high voltage and direct sunlight.
- Never short circuit the positive and negative terminals.
- Never ship or store battery along with metal.
- Never disassemble the battery.
- Never knock, throw or impact the battery.
- Never throw the battery into water.
- Never install in under bonnet applications.

Tips

- If battery cuts out on low voltage immediately disconnect load - Low voltage cut off device strongly recommended at 9.5V.
- If battery gets below 9V, charge battery within 15 days.
- Battery should be charged every 6 months.
- Ideal storage temperature -20°C - 35°C
- Do not leave battery in low state of charge for long periods of time.
- Keep battery away from high temperatures
- If battery shows signs of deformation, heat or emits smell, immediately discontinue use.

Charging

A standard Constant Voltage (Automatic) SLA Battery charger can be used to charge the Invicta Lithium batteries however the following requirements must be met:

- Charger must not contain Sulphation/ Equalisation setting. If so then this step needs to be turned off.
- Maximum charge voltage of 14.6V
- Recommended float charge voltage 13.9 +/- 0.1V.
- It is not recommended to have batteries sit on float charge for an extended period of time.
- Please ensure your charger is matched to the current rating of your battery and take note of the recommended charge current in the batteries specification sheet - Normally half the batteries rated capacity. For example SNL12V100S - Recommended charge current = 50A.
- A charger with LiFePO₄ setting is recommended.

Series and Parallel of batteries

There are strict conditions under which the Invicta Lithium Range can be configured into Series OR Parallel systems. Please note these conditions below.

- Not all SNL batteries can be configured into a Series or parallel system. Please note the part number of the battery. If the Part number contains an "S" suffix example SNL12V100S. Then this denotes that the battery can be configured into a system of up to, but not exceeding 4 batteries in Series.
- If the part number does not end in an "S" for example SNL12V100BT, then series configuration is strictly prohibited.
- All Invicta lithium batteries can be configured into a parallel configuration up to 4 units in parallel under the conditions outlined below.

Parallel Configuration



1. Ensure all batteries to be in the parallel configuration have been fully charged individually by matched chargers.
2. Ensure OCV of each battery is less than <math><0.2V</math> of each other.
3. After charging, set aside and allow to rest for 8 hours.
4. Utilising wires of circumference large enough to carry required current (>100A), connect the batteries in the above (Fig 1) configuration. Ensure all connecting cables lengths are of the same length.
5. Be careful not reverse connect the Positive and Negative.
6. Ensure correct charge voltage and current is utilised for configuration.
7. Max Charge Voltage - SNL12V... 14.6V / SNL24V... 29.2V.
8. It is absolutely prohibited to series a paralleled configuration.

9. Once in Parallel configuration ensure a full charge is completed a min of every 3months
10. Once in Parallel configuration, the system must be charged and discharged as a system. If one batteries needs to be replaced, the whole system will require replacing.

Series Configuration



1. Check Part number contains an "S" on end to ensure the battery is suitable for Series configuration.
2. Ensure all batteries to be in the series configuration have been fully charged individually by matched chargers
3. Ensure OCV of each battery is less than <math><0.2V</math> of each other.
4. After charging, set aside and allow to rest for 8 hours.
5. Utilising wires of circumference large enough to carry required current (>100A), connect the batteries in the above (Fig 2) configuration. Ensure all connecting cables lengths are of the same length.
6. Be careful not reverse connect the Positive and Negative.
7. Ensure correct charge voltage and current is utilised for configuration:
 - A. SNL12V... 14.6V / SNL24V... 29.2V
 - B. Two batteries in Series - 29.2
 - C. Three Batteries in Series - 43.8V
 - D. Four Batteries in Series - 58.4V
8. It is absolutely prohibited to parallel a series configuration.
9. Once in Series configuration ensure a full charge is completed a min of every 3months
10. Once in Series configuration, the system must be charged and discharged as a system. If one batteries needs to be replaced, the whole system will require replacing.