Ionic Electronics

Lithium (LiFePO4) Battery Manual
(100 AH and 150AH, 12.8v)

IONIC

Power your Adventures

Applies to Models:

IE-ST-12-100,
IE-ST-12-150

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Instruction Manual

Read and understand this instruction manual thoroughly before using the product. It contains important information for your safety as well as operating and maintenance advice.

General information

A lithium battery is required to achieve a stable power supply even under heavy loads. Lithium batteries are the best replacement for lead acid batteries and AGM batteries.
Lithium batteries are relatively lightweight and offers enormous energy reserves.
Thanks to the integrated BMS (battery management system), Ionic Electronics' LiFePo4 batteries can be connected in **parallel** to increase in capacity of a battery bank to a maximum of four batteries.
The IE-ST model batteries can connected in **series up to 48v**. This only applies to batteries sold **AFTER** May 2022. If uncertain, please contact us.

The Lithium Iron Phosphate (LiFePO4) battery is the safest of the regular lithium battery types. The nominal voltage of a LiFePO4 cell is 3.2V.

Technical Data for Lithium Battery

Model	IE-ST-12-100	IE-ST-12-150
Nominal Voltage(V)	12.8	12.8
Nominal Capacity(Ah)	100	150
Usable Capacity (Wh)	1280	1920
Dimension (mm)	280*176*190	355*175*188
Max. Charge Current(A)	80	100
Max. Discharge Current(A)	100	120
Peak Discharge Current (A)	200A for 1s, 160A for 10s	320A for 1s, 260A for 10s
Cycle Life	≥5000@25	≥5000@25
Working Temperature(℃)	- 25 ~ 60	- 25 ~ 60
Discharge Voltage(V)	12.8	12.8
Charge Voltage(V)	13.5 ~ 14.6	13.5 ~ 14.6
Internal Impedance(mΩ)	≤20	≤20
Water Dust Resistance	IP65	IP65

Battery Management System (BMS)

The Battery Management System (BMS) is installed in every battery, this ensures that the battery is safe in the events of:

-Low Temperature Charging Cut-off.
-High Temperature Charging or Discharging Cut-off.
-Over Charging or Discharging Protection.
-Over Current & Short Circuit Protection.
-Battery Cell voltage Auto Balance.

Application of Batteries

With the large capacity and relatively light weight, lithium batteries have a diverse range of uses. They can be used for stationary or mobile applications. They are especially common for, but not limited to, mobile homes, RV's, campers, solar systems, boats, golf carts, wheelchairs, electric scooters, e-bikes, emergency power supply, UPS and house batteries.

Battery Charging

Use a suitable lithium battery charger. Fully charge the battery for first time use.

Performance and Efficiency

An Ionic Electronics' LiFePo4 battery has a charging efficiency of 96%, with an output efficiency of 99% utilizing almost all of its stored capacity.

Safety Guidelines and Measures

Intended Use

PLEASE FOLLOW THESE INSTRUCTIONS AND SAVE FOR FUTURE REFERENCE.
The battery may only be used for the purposes described in the operating instructions. Use for other purposes is considered improper use and will invalidate the product warranty. The manufacturer is not liable for damage caused by faulty or improper use of the product. Use in aviation or in medical devices that serve to support life contradict the intended use. LiFePO4 Batteries are designed for use as energy storage. Possible areas of application for the battery are used as an on-board battery in leisure vehicles or boat.

Markings


Conformity mark (CE mark).

RoHS Conformity according to RoHS directive.

Conformity mark for material safety data sheet.


Fire, naked flames and smoking are prohibited.


Ingress protection rating IP65


Dispose of the Lithium LiFePO4 battery in accordance with your state, and local authority, federal laws and regulations. Batteries can be sent to the manufacturer, can be returned. Do not mix with other (industrial) waste.


This product or parts of this product can be recycled.
The connections of the lithium battery are always live. Therefore, never place objects or tools on the lithium battery to avoid short circuits. Use insulated tools.
Do not wear metallic objects such as watches, bracelets, etc. on your body. Use a class D fire extinguisher, foam or CO2 fire extinguisher. Storage and Transportation Information

The battery must be packed and protected during transport.
The lithium battery must be transported in accordance to the rules of transport, these should always be followed (transportation code UN3480/UN38.3).
Never lift the battery by the terminals, only by the handles.
The battery should be stored in temperatures ranging from -10℃ to +30℃. During transport, the battery should be 50-60% charged.
The battery should be charged every three months to keep it active to maintain maximum capacity.

Disposal

Batteries that are marked with the recycling symbol must be returned to approved recycling centers. You can also contact the manufacturer to arrange the battery to be returned. Batteries must not be disposed of in household or industrial waste.

Important Instructions

- Do not open the LiFePO4 battery without consulting the dealer. Unauthorized opening of the battery voids the manufacturer's warranty.
- Only use the battery for the application for which it is intended.
- Do not short-circuit the LiFePO4 battery.
- Installation and maintenance may only be carried out by qualified specialists.
- Do not expose to direct sunlight, protect batteries from excessive heat. Temperatures above +60 °C can damage the battery.
- Use only lithium compatible chargers.
- The battery will retain more charge if it is disconnected from all devices.
- Pay attention to proper assembly.
- Avoid damage of any kind, for example: dropping, drilling, etc. (Risk of short circuit).
- Always keep the battery dry and clean.
- Note the plus (+) and minus (-) markings on the LiFePO4 battery and the device and pay attention to the correct polarity.
- The cycle capacity may vary due to the changes in the working temperature and the charge and discharge rate may differ from the nominal capacity.
- Suitable for parallel connections with a maximum of four batteries.
- Before connecting, bring to the same charge level. Batteries from different manufacturers or different types should not be interconnected.

Installation of Battery

Lithium LiFePo4 batteries are heavy. Make sure it is adequate and securely attached and always use the appropriate transport equipment. Always take care when installing lithium batteries. Make absolutely sure that the LiFePO4 battery is not connected in reversed polarity. Should the battery be connected incorrectly, the BMS electronics will be irreparably damaged and must be replaced with a new BMS board. **This is not a warranty case.**

Manufacturer's Warranty

Warranty is valid for 5 years starting at the date of purchase.
Manufacturer Warranty covers any manufacturing defects or break downs due to design or manufacturing flaws. It DOES NOT cover user ever or damage occurred due to incorrect use.