

# Manual on Lithium-ion Battery

Product model:LFD12100-I



**Revision record**

Version	Amendments	Revision date	Establishment
V1.0	First edition	2024/06/06	

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## **1. Warning**

1. Do not squeeze, puncture, drop, vibrate, heat or short-circuit, and keep away from corrosive substances.
2. Do not disassemble the battery by yourself. Incorrect disassembly can cause short circuits and other problems such as fire, gas, and even explosion.
3. Do not place the battery in a fire. Otherwise, it may cause very dangerous situations such as fire, explosion, etc.
4. Do not place the battery in substances like water or liquids.
5. Please do not replace the battery cells on your own. Any changes must be made by the manufacturer.
6. If deformation, swelling, leakage or other issues are found, please do not use.
7. Do not use the battery in high or low ambient temperatures.

## **2. Introduction to Basic Functions of Lithium Lead Battery LFD12100-I**

This is a lithium battery pack that can be combined with an adaptive inverter to form a household energy storage system. AC mains electricity (or solar energy generated through photovoltaic panels) is converted into appropriate voltage range DC electricity through an inverter to charge the battery pack and store electrical energy for use when needed. When battery storage is needed, the electricity from the lithium battery pack is converted into alternating current (grid connected or off grid, depending on user needs and inverter functions) through an inverter to supply power to the user's electrical equipment.



Appearance diagram of lithium lead batteries LFD12100-I

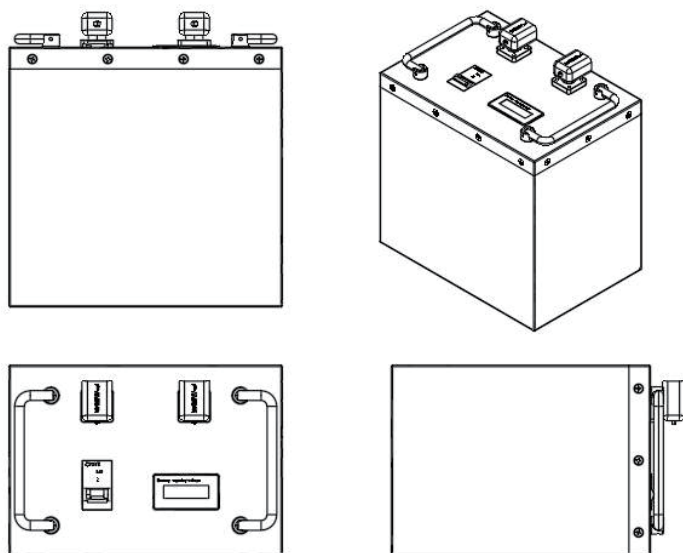


Table 1: Technical parameters of lithium lead batteries LFD12100-I

No	Item	Rating
1	model	LFD12100-I
2	Product specifications	12.8V102Ah
3	battery type	LFD(LiFePO4)
4	nominal voltage（V）	12.8
5	Voltage range(V)	9.2-14.6
6	Charging float voltage（V）	14.4

7	Equal charging voltage(V)	14.6
8	Charging cutoff voltage (V)	14.6
		or cell $\geq$ 3.65
9	Max charging/discharging current (A)	100/100
10	Discharge Cut-off Voltage (V)	or total voltage $\leq$ 9.2
		or cell $\leq$ 2.3
11	Rated battery capacity(Ah)	102Ah
12	Rated battery energy (KWh)	1.3
13	Maximum number of parallel (number)	20
14	Maximum number of strings (number)	4
15	dimension (L*W*H) $\pm$ 1.2mm	253*176*240
16	Battery pack weight $\pm$ 1kg	13

\*The rated capacity represents the current released by charging at 0.5C to the cut-off state under the condition of  $25 \pm 5^{\circ}\text{C}$ , allowing it to stand for 30 minutes, and discharging at 0.5C to the cut-off state

### 3. Structure and Function Description of Lithium Substitute Lead Battery Products

Lithium lead batteries come in specifications: 1.28KWh. with positive and negative terminals on the top and labeled.

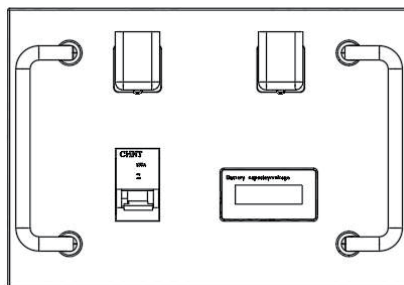


Table 2. Wall mounted battery interface details

Reference	Interface	Identification	Function Description
+	Positive pole power supply terminal	+or POS	Battery positive output terminal
-	Negative power supply terminal	-or NEG	Battery negative output terminal

The battery consists of a 4S series, a hardware casing, a protective plate, a power display, power terminals, etc. The casing is fixed with screws.

## 4. Installatio and usag instructions for LFD12100-I lithium lead batteries

### 4.1 open boxing inspection

After opening the packaging box, check whether the goods are complete according to the goods packaging list in this document, inspect the appearance of the battery pack, and confirm the integrity and correctness of the equipment; Check if the battery is deformed or corroded.

LFD12100-I battery packing list:

LFD12100-I battery pack × 1

16 square 0.2m positive electrode wires × 1

16 square 0.2m negative electrode wire × 1

## **4.2. Precautions before installation**

1. This product supports serial use. LFD12100-I can support up to 4 battery packs in series.
2. When using, the inverter must have voltage protection function, and the charging voltage of LFD12100-I cannot exceed  $14.4V \times N$ . The discharge voltage cannot be lower than  $9.2V \times N$ . Violating voltage restrictions can damage battery cells, leading to a decrease in capacity, and in severe cases, can result in safety accidents.
3. Before installing the battery module, it is necessary to carefully check whether the open circuit voltage of the battery is normal, and whether there is any damage to the shell, leakage, or other phenomena.
4. During the installation process, insulated tools and gloves should be used. Metal containing conductors such as watch bracelets should be removed from the wrist to prevent electric shock or short circuits between the positive and negative poles.
5. The installation location of the battery should be far away from heat sources or areas prone to metal sparks, with a safe distance of more than 0.5m.
6. Cannot connect batteries of different models, performance, and manufacturers together for use.
7. The connection wires for battery pack installation should be as short as possible to prevent excessive line losses.
8. Batteries should be kept away from direct sunlight and should not be placed in environments with a large amount of radioactivity, infrared radiation, organic solvent gases, and corrosive gases. They should be kept away from windows, air conditioning, exhaust fans, etc.

## **4.3 Installation steps:**

1. If parallel connection is required, before conducting parallel connection, please check the voltage of each battery module. The voltage difference between battery modules should be less than 0.2V. If it is greater than this value, please adjust the voltage through charging and discharging and let it stand for at least 15

minutes before proceeding with the operation.

2. After the installation of the battery system, pay attention to the insulation treatment of the battery poles and cover the insulation cover

## **5. Storage instructions**

1. When storing batteries, it is necessary to ensure that the SOC  $\geq$  50%;
2. The battery storage location should be dry and away from the source of goods;
3. Do not store batteries at high temperatures ( $\geq 45^{\circ}\text{C}$ )
4. If the battery needs to be stored for a long time, it should be recharged at least once every three months;

## **6. Declaration**

1. Due to product version upgrades or other reasons, the content of this document will be updated from time to time. Unless otherwise agreed, this document is for instructional purposes only. All statements, information, and advice in this document do not constitute any express or implied warranties.
2. Before installing the equipment, please read the user manual carefully to understand product information and safety precautions.
3. All installation operations of the equipment must be performed by trained and qualified electrical technicians. Operators must wear personal protective equipment.
4. Before installing the equipment, please check the delivery items according to the "Packing List" to ensure that all the items are complete and intact, without any obvious external damage. If anything is missing or damaged, please contact your dealer.
5. Equipment damage caused by failure to operate according to the document is not covered by the equipment warranty.
6. The cable colors mentioned in this document are for reference only, and the selection of cables should comply with local cable standards.



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