



## Lead-Acid Replacement Battery User Manual

LFP Lead-Acid Replacement Battery Series



Get to know us

Anhui LEAD-WIN New Energy Technology Co., Ltd.

Tel: +86 0551-65600581  
E-mail: [info@lybess.com](mailto:info@lybess.com)  
Website: [www.lybess.com](http://www.lybess.com)

First floor, No. 8-5, Liandong U Valley Shushan  
International Enterprise Port, 1499 Zhenxing Road,  
Shushan District, Hefei City, Anhui, China

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### About this Document

This document describes the installation, electrical connection, operation and commission of Lead-Acid Replacement Battery (hereafter simply put LFP Lead-Acid Replacement Battery Series). Before installing and operating LFP Lead-Acid Replacement Battery Series, ensure that you are familiar with product features, functions, and safety precautions provided in this document.

# 1 Product Information

## 1.1 Battery Overview

The battery is a Lead-Acid Replacement Battery pack which consists of long span LiFePO4 battery cells and functional BMS. It can customize different voltage capacities according to customer needs, and can form a system according to needs to meet power demand. It is mainly used to replace lead-acid batteries.

## Features

- LiFePO4 cell
- > 2000 cycles @0.5C conditions
- Maximum 1C charge and 1C discharge capability
- Protective and active BMS allows greater reliability and control
- Fully recyclable at the end of life

## 1.2 Appearance



12.8V 50Ah



12.8V 60Ah



12.8V 80Ah



12.8V 200/230/234.2Ah



12.8V 300Ah



25.6V 30Ah

## 1.2 Appearance



12.8V 100/115Ah



12.8V 120/135Ah



12.8V 140/150/152Ah

# 2 Safety Information

## 1.2 Appearance



25.6V 50/65Ah



25.6V 60/75Ah



25.6V 100Ah






25.6V 150Ah

## 2.1 General Safety

Please carefully read the manual safety precautions, and observe all the safety instructions on the equipment and in this document.

The "DANGER" , "WARNING", and "NOTICE" statements in this document do not cover all the safety instructions. They are only supplements to the safety instructions.

For user safety and utilization efficiency of this manual, a list of symbols are designed to alert people from danger. You must understand and comply with the emphasized information to avoid personal injury and property damage. Relative safety symbols have been listed below.

 <b>Danger</b>	DANGER indicates a hazardous situation which, if not avoided will result in serious injury and fire.
 <b>Warning</b>	WARNING indicates a hazardous situation which, if not avoided will result in property loss or void warranty.
 <b>Notice</b>	NOTICE indicates normal situation which, if not avoided will result in that battery doesn't work.

Follow local laws and regulations when installing, operating, or maintaining the equipment. The safety instructions in this document are only supplements to local laws and regulations.

## 2.2 Personal Safety

### Personal Requirements

People who plan to install or maintain battery equipment must be trained, understood all necessary safety precautions, and are able to perform all operations correctly.

Only qualified professionals or trained people are allowed to install, operate, and maintain the equipment.

### Personal Safety



- Do not place battery at a children or pet touchable area.
- Do not touch the energized battery, as the enclosure is hot.
- Do not touch the energized battery terminals.
- Do not stand on, lean on, or sit on the battery.

## 2.3 Electrical Safety

### Symbols on Battery

There are some electrical symbols on battery relate to electrical safety. Please make sure you have fully understand them before installation.

	Electrical danger	Voltage exits when the battery is powered on. Only qualified engineers are allowed to operate.
	Earth connector	Earth connection.
	DC positive and negative connectors	Identify positive and negative connectors of DC power source.
	CE mark	The product meets CE certification.
	WEEE tag	Can't leave battery as garbage disposal.
	Recycle	Battery can be recycled.

## 2.3 Electrical Safety

### Electrical Safety



- Before installation, ensure that the equipment is intact. Otherwise, electric shocks or fire may occur.
- Do not connect or disconnect power cables when battery is power-on. Which may cause electric arcs and sparks more overfire or personal injury. Before connecting a power cable, check the positive or negative connectors are correct.
- Do not parallel connection with different batteries.
- Do not connect battery with AC directly.
- Do not connect battery with PV wiring directly.
- Do not connect batteries in series.
- Do not connect battery to faulty or unqualified inverter or charger.
- Do not create short circuits with the external connection.
- Make sure the grid is cut off and the battery is powered off before maintenance.
- Make sure the earth cable is connected correctly before operation.



- Recharge battery in every six months.
- Recharge battery within 10 days after battery is fully discharged.
- Make sure battery cable placement is installed correctly.
- When the battery is being installed or repaired, make sure the battery is powered off and using a multimeter to make sure there is no voltage in the positive and negative terminals.

## 2.3 Electrical Safety



- Please use dedicated insulated tools for install and maintenance.
- Please check lights on sequence when battery power-on.
- Please make sure communication connection connect correctly with battery and inverter.
- Please make sure ADDS dip switch settings are correctly for single or multiple batteries.
- Please check inverter alarm or SOC reading when there is BMS communicated with inverter.

## Environment Safety



- Ensure that the equipment is installed in a dry and well-ventilated environment.
- The installation position must be away from direct sunlight and rain.
- The installation position must be far away from fire sources.
- The installation position must be far away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
- Do not expose the equipment to flammable or explosive gas or smoke.
- Do not perform any operation on the equipment in such environments.
- The operation and service life of the battery depends on the operating temperature. Operate the battery at a temperature equal to or better than the ambient temperature. The recommended operating temperature range is from 0°C to 30°C.

## 2.4 Transportation Safety



- The products passed certification UN38.3.
- The products have MSDS.
- The products belong to class 9 dangerous goods.
- Please protect the packing case from the below situations.
- Being dampened by rains, snows, or falling into water.
- Falling or mechanical impact.
- Being upside-down or tilted.

# 3 Attentions

- Before using the battery pack, please read the manual carefully to understand the usage and precautions;
- Non-professionals shall not disassemble the battery without authorization;
- Be sure to use the original special charger for charging or the charger agreed by both parties;
- During use or storage, if you find abnormal heating, discoloration, deformation or other abnormalities in the battery, please stop using the battery;
- The working temperature of the battery is -20~55°C;
- When the battery is stored for less than 3 months, the storage temperature of the battery is -20 to 45°C; Less than 1 year, storage temperature is -20 ~ 25°C, please place the battery in a dry and cool environment;
- Do not bump, apply external force or make the battery fall from high altitude during use;
- If the battery is not used for a long time, the battery pack needs to be charged to more than 80%, turn off the power switch, and store it in a ventilated and dry environment.

## 4 Specifications

Model	12.8V 50Ah
cell Model	LFP
Usable Capacity	640Wh
Nominal Voltage	12.8V
Nominal Capacity	50Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	25A
Continuous Discharging Current	25A
Max. Output Power	640W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	7kg
Product Dimension	198*166*170mm

Model	12.8V 60Ah
cell Model	LFP
Usable Capacity	768Wh
Nominal Voltage	12.8V
Nominal Capacity	60Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	30A
Continuous Discharging Current	30A
Max. Output Power	640W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	8kg
Product Dimension	257*132*200mm

## 4 Specifications

Model	12.8V 80Ah
cell Model	LFP
Usable Capacity	1024Wh
Nominal Voltage	12.8V
Nominal Capacity	80Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	40A
Continuous Discharging Current	40A
Max. Output Power	640W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	10kg
Product Dimension	307*169*208mm

Model	12.8V 100Ah
cell Model	LFP
Usable Capacity	1280Wh
Nominal Voltage	12.8V
Nominal Capacity	100Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	100A
Max. Discharging Current	100A
Continuous Charging Current	50A
Continuous Discharging Current	50A
Max. Output Power	1280W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	12kg
Product Dimension	307*169*208mm



## 4 Specifications

Model	12.8V 115Ah
cell Model	LFP
Usable Capacity	1472Wh
Nominal Voltage	12.8V
Nominal Capacity	115Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	100A
Max. Discharging Current	100A
Continuous Charging Current	50A
Continuous Discharging Current	50A
Max. Output Power	1280W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	13.5kg
Product Dimension	330*172*215mm

Model	12.8V 120Ah
cell Model	LFP
Usable Capacity	1536Wh
Nominal Voltage	12.8V
Nominal Capacity	120Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	120A
Max. Discharging Current	120A
Continuous Charging Current	60A
Continuous Discharging Current	60A
Max. Output Power	1536W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	13.5kg
Product Dimension	406*173*236mm

## 4 Specifications

Model	12.8V 135Ah
cell Model	LFP
Usable Capacity	1728Wh
Nominal Voltage	12.8V
Nominal Capacity	135Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	120A
Max. Discharging Current	120A
Continuous Charging Current	65A
Continuous Discharging Current	65A
Max. Output Power	1536W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	16kg
Product Dimension	406*173*236mm

Model	12.8V 140Ah
cell Model	LFP
Usable Capacity	1792Wh
Nominal Voltage	12.8V
Nominal Capacity	140Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	120A
Max. Discharging Current	120A
Continuous Charging Current	70A
Continuous Discharging Current	70A
Max. Output Power	1536W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	16.5kg
Product Dimension	483*170*240mm

## 4 Specifications

Model	12.8V 150Ah
cell Model	LFP
Usable Capacity	1920Wh
Nominal Voltage	12.8V
Nominal Capacity	150Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	120A
Max. Discharging Current	120A
Continuous Charging Current	75A
Continuous Discharging Current	75A
Max. Output Power	1536W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	18kg
Product Dimension	406*173*236mm

Model	12.8V 152Ah
cell Model	LFP
Usable Capacity	1945.6Wh
Nominal Voltage	12.8V
Nominal Capacity	152Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	120A
Max. Discharging Current	120A
Continuous Charging Current	75A
Continuous Discharging Current	75A
Max. Output Power	1536W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	18kg
Product Dimension	483*170*240mm

## 4 Specifications

Model	12.8V 180Ah
cell Model	LFP
Usable Capacity	2304Wh
Nominal Voltage	12.8V
Nominal Capacity	180Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	180A
Max. Discharging Current	180A
Continuous Charging Current	90A
Continuous Discharging Current	90A
Max. Output Power	2304W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	20kg
Product Dimension	307*169*208mm

Model	12.8V 200Ah
cell Model	LFP
Usable Capacity	2560Wh
Nominal Voltage	12.8V
Nominal Capacity	200Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	200A
Max. Discharging Current	200A
Continuous Charging Current	100A
Continuous Discharging Current	100A
Max. Output Power	2560W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	20kg
Product Dimension	522*240*218mm

## 4 Specifications

Model	12.8V 230Ah
cell Model	LFP
Usable Capacity	2944Wh
Nominal Voltage	12.8V
Nominal Capacity	230Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	200A
Max. Discharging Current	200A
Continuous Charging Current	115A
Continuous Discharging Current	115A
Max. Output Power	2560W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	27.6kg
Product Dimension	522*240*218mm

Model	12.8V 234.2Ah
cell Model	LFP
Usable Capacity	2997.76Wh
Nominal Voltage	12.8V
Nominal Capacity	234.2Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	200A
Max. Discharging Current	200A
Continuous Charging Current	115A
Continuous Discharging Current	115A
Max. Output Power	2560W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	28kg
Product Dimension	522*240*218mm

## 4 Specifications

Model	12.8V 300Ah
cell Model	LFP
Usable Capacity	3840Wh
Nominal Voltage	12.8V
Nominal Capacity	300Ah
Discharge Voltage Range	8-14.6V
Max. Charging Current	200A
Max. Discharging Current	200A
Continuous Charging Current	150A
Continuous Discharging Current	150A
Max. Output Power	2560W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	36kg
Product Dimension	520*269*220mm

Model	25.6V 30Ah
cell Model	LFP
Usable Capacity	768Wh
Nominal Voltage	25.6V
Nominal Capacity	30Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	30A
Max. Discharging Current	30A
Continuous Charging Current	15A
Continuous Discharging Current	15A
Max. Output Power	768W
Warranty	3 years
Terminal	M6
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	7.2kg
Product Dimension	260*168*209mm

## 4 Specifications

Model	25.6V 50Ah
cell Model	LFP
Usable Capacity	1280Wh
Nominal Voltage	25.6V
Nominal Capacity	50Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	25A
Continuous Discharging Current	25A
Max. Output Power	1280W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	12kg
Product Dimension	307*169*208mm

Model	25.6V 60Ah
cell Model	LFP
Usable Capacity	1536Wh
Nominal Voltage	25.6V
Nominal Capacity	60Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	30A
Continuous Discharging Current	30A
Max. Output Power	1280W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	16kg
Product Dimension	330*172*215mm

## 4 Specifications

Model	25.6V 65Ah
cell Model	LFP
Usable Capacity	1664Wh
Nominal Voltage	25.6V
Nominal Capacity	65Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	30A
Continuous Discharging Current	30A
Max. Output Power	1280W
Warranty	3 years
Terminal	M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	16kg
Product Dimension	307*169*208mm

Model	25.6V 75Ah
cell Model	LFP
Usable Capacity	1920Wh
Nominal Voltage	25.6V
Nominal Capacity	75Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	50A
Max. Discharging Current	50A
Continuous Charging Current	35A
Continuous Discharging Current	35A
Max. Output Power	1280W
Warranty	3 years
Terminal	M6 / M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	18kg
Product Dimension	330*172*215mm



## 4 Specifications

Model	25.6V 100Ah
cell Model	LFP
Usable Capacity	2560Wh
Nominal Voltage	25.6V
Nominal Capacity	100Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	100A
Max. Discharging Current	100A
Continuous Charging Current	50A
Continuous Discharging Current	50A
Max. Output Power	2560W
Warranty	3 years
Terminal	M6 / M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	20kg
Product Dimension	532*207*215mm

Model	25.6V 150Ah
cell Model	LFP
Usable Capacity	3840Wh
Nominal Voltage	25.6V
Nominal Capacity	150Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	150A
Max. Discharging Current	150A
Continuous Charging Current	75A
Continuous Discharging Current	75A
Max. Output Power	3840W
Warranty	3 years
Terminal	M6 / M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	36kg
Product Dimension	520*269*220mm

## 4 Specifications

Model	25.6V 200Ah
cell Model	LFP
Usable Capacity	5120Wh
Nominal Voltage	25.6V
Nominal Capacity	200Ah
Discharge Voltage Range	16-29.2V
Max. Charging Current	200A
Max. Discharging Current	200A
Continuous Charging Current	100A
Continuous Discharging Current	100A
Max. Output Power	5120W
Warranty	3 years
Terminal	M6 / M8
Case Material	ABS
Cycle Life	> 2000
Working Temp. Range	-20°C~60°C
Storage Temperature	-30°C~60°C
Weight	45kg



Learn More: [www.lybess.com](http://www.lybess.com)

E-mail: [info@lybess.com](mailto:info@lybess.com)