



# Manual Instruction

Read the instruction manual carefully and make sure that you understand the contents before you use the product. When installing, using and maintaining the battery, the user safety must be guaranteed.

## 1. General information

A lithium battery is required to achieve a stable power supply even under heavy loads, absolutely the best replacement for a lead battery. In addition to the extremely light weight advantage, it offers additional enormous energy reserves. Thanks to the integrated BMS (battery management system), **SBL** LiFePo4 batteries for 12V DC applications. An increase in capacity through further LiFePo4 batteries can be easily implemented. The lithium iron phosphate battery is the safest of the regular lithium battery types. The nominal voltage of a LiFePO4 cell is 3.2V. A 12.8V LiFePO4 battery therefore consists of four cells connected in series.

It accepts parallel connections for increased capacity and serial connections for increased voltage, max connections four batteries.

### BMS

#### BATTERY MANAGEMENT SYSTEM

The battery Management system (BMS) installed in every battery ensures that the battery in the event of under voltage or overload switches off and automatically again turns on as soon as the problem is resolved.

### EASY REPLACEMENT THE EXISTING BATTERY

The dimensions of the housing are identical with the most common AGM, lead acid or GEL batteries. With optionally available round poles can also use existing pole, terminals can be reused. An exchange the battery holder or a change the loading structure is not necessary.

### APPLICATION AREAS

The areas of application of this battery are specifically for the stationary or mobile area. Lithium batteries are diverse. Especially Mobile homes, solar, e-boats, electric scooters, golf carts or electron-mobiles / wheelchairs and cleaning machines will always be more often equipped with it.

### BATTERY CHARGING

Use the suitable lithium battery charger. Waiting until the battery is fully charged.

### PERFORMANCE / EFFICIENCY

A **SBL** LiFePo4 battery can do more than 96% of the energy made available directly to save. A 100% utilization of the existing capacity takes place with the same output voltage.

## 1.1. PRODUCT FEATURES / BENEFITS / AREAS OF APPLICATION

- HIGH PERFORMANCE TRACTION / STORAGE BATTERY
- INTEGRATED (BMS) BATTERY MANAGEMENT SYSTEM
- SAFE LITHIUM TECHNOLOGY (LIFEPO4)
- HIGH CYCLES LIFE
- HIGH DISCHARGE CURRENT
- LIGHT WEIGHT
- ONE TO ONE REPLACEABLE WITH LEAD BATTERY
- LOW SELF-DISCHARGE

### THE RIGHT BATTERY FOR EVERY APPLICATION

- MOTORHOMES, CARAVANS AND CARAVANS
- PHOTOVOLTAICS, SOLAR SYSTEMS AND RENEWABLE ENERGIES
- HIGH PERFORMANCE TRACTION / STORAGE BATTERY
- FISHING, ELECTRIC BOAT MOTORS AND SONAR
- MOBILE POWER SUPPLY, CAMPING AND LEISURE
- EMERGENCY POWER SUPPLY / UPS

## 1.2. BATTERY MANAGEMENT SYSTEM

The battery management system (BMS) built into each battery ensures that the battery switch off in the event of under voltage or overload and automatically again turns on as soon as the problem is resolved.

### THE ADDITIONAL FUNCTIONS OF SBL BMS ARE:

- Protection of the cell against under voltage by switching off the load in goodtime.
- Protection of the cell against over voltage by reducing the charging current or switching off the charging process.
- Shutting down the system in the event of excess temperature.
- Charging of the battery will be stopped in case of under temperature.

## 1.3. TECHNICAL DATA FOR STANDARD LITHIUM LIFEPO4 BATTERY

Model	LFP-12V8AH	LFP-12V20AH	LFP-12V40AH	LFP-12V100AH
Nominal Voltage(V)	12.8	12.8	12.8	12.8
Nominal Capacity(Ah)	8	20	40	100
Usable Capacity (Wh)	102	256	512	1280
Dimension (mm)	151*65*97	181*77*168	198*166*170	330*172*215
Charge Current(A)	8	18	30	80
Discharge Current(A)	10	20	50	100
Cycle Life	≥2000@25	≥2000@25	≥3000@25	≥5000@25
Working Temperature(°C)	- 20 ~ 60	- 20 ~ 60	- 20 ~ 60	- 20 ~ 60
Discharge Voltage(V)	12.8	12.8	12.8	12.8
Charge Voltage(V)	14.6	13.5 ~ 14.6	13.5 ~ 14.6	13.5 ~ 14.6
Internal Impedance(mΩ)	≤20	≤20	≤20	≤20
Water Dust Resistance	IP65	IP65	IP65	IP65

## 2. SAFETY GUIDELINES AND MEASURES

### 2.1. Intended Use


**PLEASE FOLLOW THESE INSTRUCTIONS AND SAVE FOR FUTURE.**

**LOOK AT NEAR TO THE LITHIUM LIFEPO4 BATTERY.**

The battery may only be used for the purposes described in the operating instructions.


Use for other purposes is considered improper use and has the invalidity of the result in product guarantee. The manufacturer is not liable for damage caused by faulty, improper use 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 a service and on-board battery in leisure vehicles or boat.

### 2.2. MARKINGS


 Conformity mark (CE mark).


**RoHS** RoHS Conformity according to RoHS directive.

**MSDS** Conformity mark for material safety data sheet.

 Fire, naked flames and smoking are prohibited! Sparking when handling avoid cables and short circuits.

 Not waterproof.

 Dispose of the Lithium LiFePO4 battery in accordance with your local, 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. Avoid short circuits. Use isolated 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.

### 2.3. STORAGE AND TRANSPORT INFORMATION

The battery must be packed and protected well during transport.

The lithium battery must be transported according to the rules for 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 from -10°C to +30°C.

During transport, the battery should be about 50-60% charged.

The battery should be charged every three months to keep it active so that it always works maximum.

### 2.4. DISPOSAL

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

## 2.5. 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. The cable connections to the consumers must go through a backup to be protected.
- Installation and maintenance may only be carried out by qualified specialists.
- Do not expose to permanent direct sunlight. Protect from the effects of heat. Temperatures above +60 ° C can damage the battery.
- Use only compatible chargers. The battery is in a longer storage of all disconnect devices.
- Pay attention to proper assembly.
- Avoid damage of any kind, for example by falling, 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 change in the working temperature and the charge and discharge rate differ from the nominal capacity.
- Suitable for parallel connection. Before connecting, bring to the same charge level. Batteries from different manufacturers or different types should not be interconnected.

## 3. INSTALL THE BATTERY

Lithium LiFePo4 batteries are heavy. Make sure it is adequate and safe attached and always use the appropriate transport equipment. In an accident unsecured, batteries could become a projectile! Always take carefully with lithium batteries.

Make absolutely sure that the LiFePO4 battery is not connected with 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.

**The battery models LFP-12V8AH or LFP-12V20AH or LFP-12V40AH is Not designed in serial connections suitable! The battery model LFP-12V100AH is acceptable for series connection, max 4 batteries (48V).**

**Disregard can lead to a defect!**