51.2V 100Ah $LiFePO_4$ Battery Pack

TECHNICAL SPECIFICATION

Model: GH-BP-48V-A-100

1 Scope

This specification applies to LiFePO4 battery packs and defines the product model, specifications, dimensions, performance, maintenance and servicing requirements.

2 Product Type and Model

Product Type: Capacity-type LiFePO4 battery pack consisting of LiFePO4 cells and a BMS protection board.

Product Model: GH-BP-48V-A-100

Model Description:

GH – BP – 48V – A – 100

Manufacturer – Steel Case Battery Pack – Voltage – Style – Capacity

3 Technical Performance

3.1 Functional Description

(1) Energy Storage. Efficient energy storage with long service life and high reliability.

(2) Automatic protection functions with rapid response and high-precision data acquisition:

◇ Pack over-voltage/under-voltage protection and cell over-voltage/under-voltage protection;

◇ Charge/discharge over-current protection;

◇ Charge/discharge over-temperature protection;

◇ Short-circuit protection;

(3) Protection reset: charging resumes when voltage recovers to the reset

threshold.

(4) Cell balancing based on individual cell voltage using energy-transfer balancing.

(5) Common charge/discharge port.

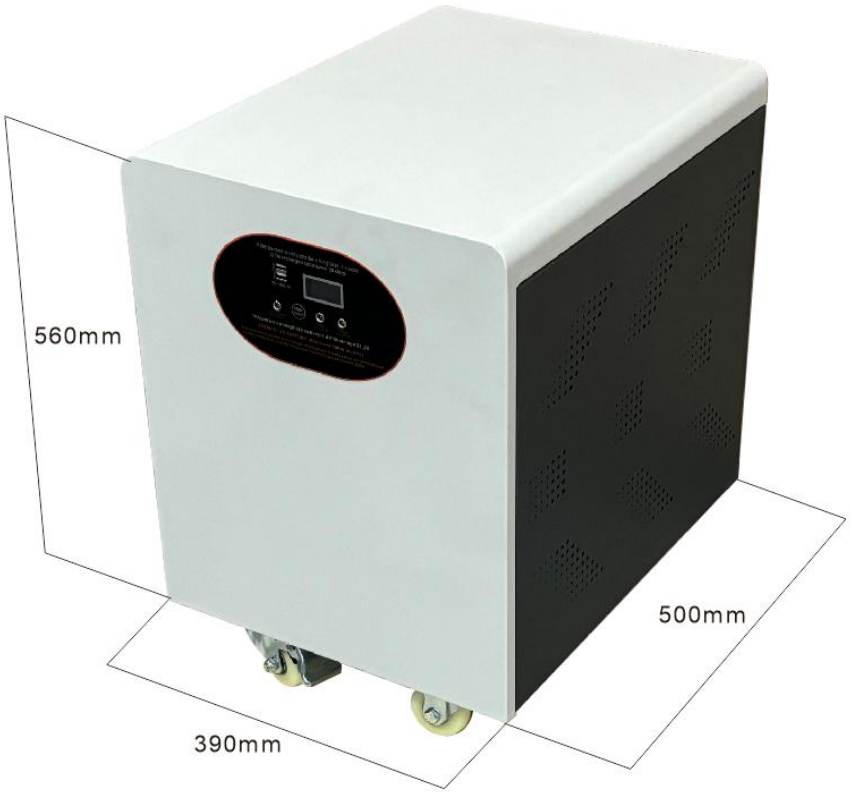
Note: This product uses a 48V hardware BMS protection board.

3.2 Technical Specifications

Item	Specification	Remarks
Model	GH-BP-48V-A-100	
Nominal Voltage (V)	51.2	
Nominal Capacity (Ah)	100	25℃ 1C discharge
Maximum Charge Voltage (V)	58.4	
Maximum Charge Current (A)	100	
Rated Discharge Current (A)	50	
Peak Discharge Current (A)	300 (1 second)	
Pack Overcharge Protection Voltage (V)	58.4	
Pack Over-discharge Protection Voltage (V)	44.8	
Cell Over-voltage Protection (V)	3.65±0.05	
Cell Over-voltage Recovery (V)	3.50±0.05	
Cell Under-voltage Protection (V)	2.80±0.05	
Cell Under-voltage Recovery (V)	2.90±0.05	
Communication	None	
Cycle Life (cycles)	6000	
BMS Quiescent Current (mA)	≤1	
Charge Temperature Range (°C)	0～55	
Discharge Temperature Range (°C)	-20～55	
Product Dimensions (mm)	500 (length) *390 (width) *560 (height)	
Net Weight (kg)	70	Reference Weight
Wooden Crate Dimensions (mm)	550 (length) *440 (width) *715 (height)	

Gross Weight (kg)	83	Reference Weight

4 Appearance and Dimensions



5 Factory State of Charge

Unless otherwise specified, the battery pack is shipped at 40%–75% state of charge.

6 Storage

(1) For a storage period of **1 week**, the storage ambient temperature shall be **-20°C to 50°C**, with a relative humidity of **45% to 85%**.

(2) For a storage period of **1 month**, the storage ambient temperature shall be **-20°C to 45°C**, with a relative humidity of **45% to 85%**.

(3) For a storage period of **6 months**, the storage ambient temperature shall be **-20°C to 40°C**, with a relative humidity of **45% to 85%**.

The battery pack should normally be stored at a state of charge (SOC) of 40%–50% in a clean, dry, and well-ventilated indoor environment with an ambient temperature of -5°C to 35°C and a relative humidity not exceeding **75%**. The battery pack should be protected from contact with corrosive substances and kept away from fire and heat sources. Starting from the date of manufacture, the battery pack should be recharged every 6 months during storage. The recommended charging temperature is 25°C ± 5°C.

7 Operating Conditions

The battery shall only be used under the following conditions. Failure to comply may result in reduced performance or shortened service life. Use outside the specified temperature ranges may cause overheating, fire, or explosion.

(4) Charging: 0°C to 45°C, relative humidity 45%–85%.
(5) Discharging: -10°C to 55°C, relative humidity 45%–85%.
(6) The daily average relative humidity shall not exceed 80%, and the monthly average relative humidity shall not exceed 80%.
(7) The installation and operating environment shall be free from severe vibration, impact, and strong electromagnetic interference. The external magnetic field strength shall not exceed 0.5 mT.
(8) The installation tilt angle from the vertical position shall not exceed **5%**.
(9) The operating environment shall be free from explosive hazardous substances. The surrounding atmosphere shall not contain corrosive gases, conductive media, or substances that may damage insulation. The presence of mold is not permitted.

8 Warranty

The warranty period for the battery is five (5) years from the date of shipment. The Company warrants that any battery found to have defects in materials or workmanship during the warranty period will be replaced free of charge. However, batteries damaged as a result of improper use, misuse, abuse, unauthorized modification, or failure to follow the operating instructions are not covered under this warranty and will not be eligible for replacement.

9 Precautions

Please read the following precautions carefully to ensure the correct use of the lithium-ion battery pack. The Company shall not be liable for any issues arising from failure to comply with these instructions.

9.1 Danger

Failure to observe the following instructions may result in battery leakage, fire, or explosion.

1) Do not immerse the battery in water or allow it to become wet.
2) Do not use or store the battery near heat sources such as fire, heaters, or other high-temperature environments.
3) Do not reverse the polarity of the battery terminals.
4) Do not connect the battery directly to a wall outlet or a vehicle cigarette lighter socket.
5) Do not dispose of the battery in fire or expose it to direct heating.
6) Do not short-circuit the positive and negative terminals with wires or other metal objects. Do not transport or store the battery together with necklaces, hairpins, or other metallic objects.
7) Do not strike, throw, drop, or subject the battery to severe mechanical shock or vibration.
8) Do not puncture the battery enclosure with nails or other sharp objects. Do not hammer, crush, or step on the battery.
9) Do not disassemble, modify, or tamper with the battery in any way.
10) Do not charge the battery near an open flame or under extremely high-temperature conditions.

9.2 Warning

Failure to observe the following instructions may result in battery leakage, fire, or explosion.

(1) Charge the battery only with a charger specifically designed for $LiFePO_4$ batteries. The maximum charging voltage shall not exceed 58.4V.
(2) Do not use the battery together with primary batteries (such as dry-cell batteries) or batteries of different capacities, models, or types.
(3) Do not use the battery if it emits an unusual odor, generates excessive heat, becomes deformed, discolored, or exhibits any other abnormal condition. If the battery is in use or being charged, immediately disconnect it from the equipment or charger and discontinue use.
(4) Keep the battery out of the reach of children.
(5) If the battery leaks or emits an unusual odor, immediately move it away from any source of open flame. Leaked electrolyte may cause fire or explosion.

(6) If electrolyte comes into contact with the eyes, do not rub them. Flush immediately with clean water and seek medical attention without delay. Failure to do so may result in serious eye injury.

9.3 Caution

Operate and use the lithium battery pack strictly in accordance with this manual.

If electrolyte leaks and comes into contact with skin or clothing, immediately rinse the affected area with plenty of clean running water. Failure to do so may result in skin irritation or inflammation.

Read the operating instructions of the equipment using the battery and follow the prescribed procedures for battery installation and removal.

If the battery pack terminals become dirty, clean them with a dry cloth before use. Dirty terminals may cause poor electrical contact, resulting in power loss or charging failure.