Multi-application - LiFePO4 Power

UE-48Li600BL

Issued Date > 2017-12-18

Issued Version > V00

Bluetooth

LITHIUM IRON PHOSPHATE BATTERY

1. General Information

This specification defines the performance of rechargeable LiFePO4 battery pack UE-48Li600BL manufactured by MASTER BATTERY, S.L., describes the type, performance, technical characteristics, warning and caution of the battery pack. The battery pack support Bluetooth communication function. Through Android and IOS APP, can read the battery status and information. Especially due to the Android system's openness, different smart phone manufacturer will have their own different Bluetooth hardware version and customized feature Android systems. So the APP may not work well on some smart phones (with Android system) due to compatible issue.
It is necessary for the customer to confirm whether the phone is compatible for the APP.

2. Specification (@Battery initial Temp25±5°C)

NO.	Items	Criteria
1	Rated Capacity	600Ah
	Minimum Capacity	588Ah
2	Energy	30.72kWh
3	Nominal Voltage	51.2V
4	Outgoing Voltage	≥51.2V
5	Internal resistance	≤60mΩ
6	Limited charge voltage	58.4±0.2V
7	Floating charge voltage	55.2±0.2V
8	Standard charge current	300A
9	Maximum charge current	300A
10	Maximum discharge current	300A
11	Pulse discharge current	500A/Continuous for 3s
12	Discharge cut-off voltage	32~40V

MASTER BATTERY
Polígono industrial La Dehesa
C/ Dehesa Vieja,nº2 Nave 16
28052 Madrid (Spain)
Tel. (+34) 918 021 649
Fax. (+34) 917 750 542
info@masterbattery.es



NO.	Items	Criteria
13	Dimension	Length: 600±3mm
		Width: 800±3mm
		Height: 1833±3mm
14	Weight	Approx: 470Kg
15	Operating Temperature	Charging: 0~45°C
		Discharging: -20~60°C
		Recommended operating temperature: 15°C~35°C
16	Self-discharge rate	Residual capacity: ≤2%/month; ≤12%/years
17	Storage Temperature & Humidity Range	Less than 1 month: -20°C~45°C, 45% RH~75% RH
		Less than 3 months: -10°C~35°C, 45% RH~75% RH
		Recommended storage environment: 15°C~35°C, 45% RH~75% RH
18	Communication Function	Bluetooth: Though, user can read the battery system information such as voltage, current, SOC, temperature… and so on.

Long time storage:
If the battery need be stored for a long time, the voltage should be 52.8V (50% SOC), and stored in the condition as storage proposal. It need at least one charge & discharge cycle every six months

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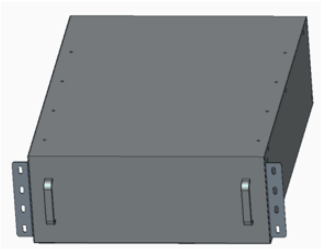
3. Composition

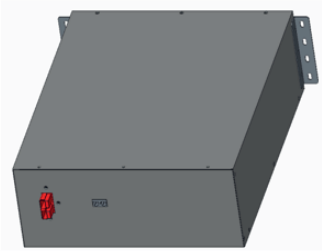
The energy storage cabinet UE-48Li600 consists of six battery modules UE-48Li100, one control box, and one black cabinet outside.

1. Module UE-48Li100

Front View



Back View

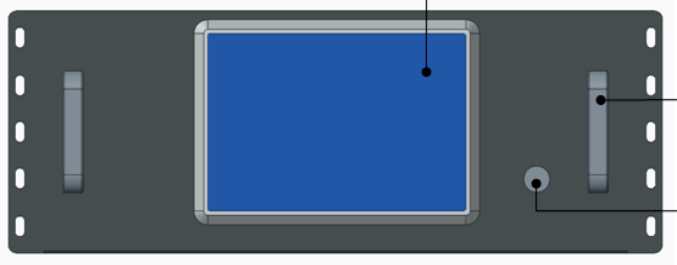


Module Specification	
Rate Capacity	100Ah
Energy	4.8kWh
Nominal Voltage	51.2~54.4V
Standard charge current	50A
Standard discharge current	50A
Pulse discharge current	100A/3s
Dimension	Length: 438±3mm
	Width: 568±3mm
	Height: 175.5±3mm
communication	2 RS485 ports

Tip: Two ports for RS485 communication , to make sure six modules and one control box communication in series.

2. The control box

Front view

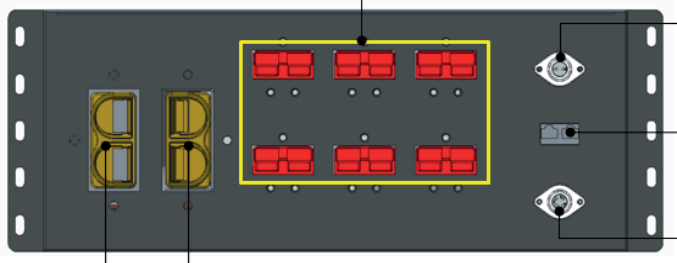


7''screen
User can read system information such as voltage, current, SOC, temperature, etc.

Handle
Easy for moving and assembling

Switch
System starting up or turning off

Back view



Parallel ports
These parallel ports should be connected to outputs of 6 modules in no particular order.

24V DC
Power supply for the fan ,which is later considered as unnecessary.

RS485 port
One port should be connected to the nearest module.

Maintenance port
RS485 For system maintenance.

System output
Volt: 48V Capacity:600Ah
Maximum charge/discharge current: 300A.

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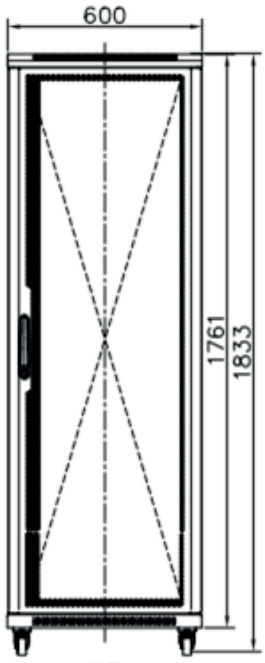
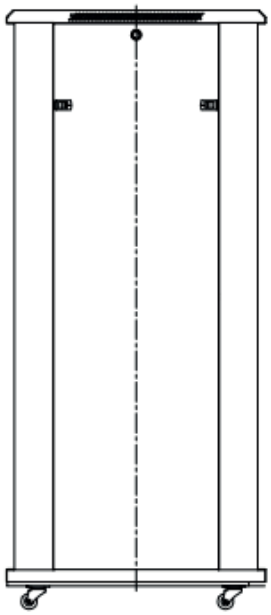
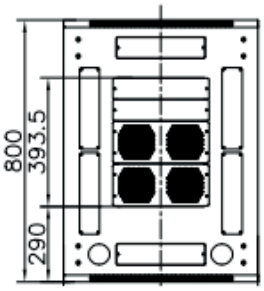
4. Dimensional Drawing (Unit: mm)



Front view



Side view



5. Instructions

1. **Energy storage system assembly**

   Step 1: Fix control box on top board of the cabinet with four screws, and 6 modules on boards below.

   Step 2: Install the power cables and communication lines. As for details, connect the control box to modules blow with power cables enclosed, connect control box and 6 modules in series with communication lines.

2. **Directions for use**

   Step 1: Connect the system output in the back of the control box to a proper load with power cable enclosed.

   Step 2: Push the button in the front of the control box, the energy storage system will be start, and some information like voltage, current, SOC, and temperature will be shown on the screen.

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6. Transportation

- Based on the character of cell, proper environment for transportation of LiFePO4 battery pack need to be created to protect the battery.
- Battery should be stayed in the warehouse 15°C ~ 35°C where it's dry, clean, shade and well-ventilated.
- The battery should be stored in 50% SOC during transportation.
- The battery need to be charged every 6 months if out of use.
- Keep the battery against dropping, turning over and serious stacking during loading.

7. Warning & Tips

Please read and follow the specification and caution remarks on battery surface before use the battery. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery. MASTER BATTERY, S.L. describes is not responsible for any accidents caused by the usage without following our specification.

- The battery must be far away from heat source, high voltage, and avoid to be exposed in sunshine for long time.
- Never throw the battery into water.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Never connect the positive and negative of battery with metal.
- Avoid excessive physical shock or vibration. don't hit, fall, stamp on the battery.
- Without the permission of the manufacturer and guidance, forbidden to remove or to assemble the battery.
- Do not use the battery mixed with other different manufacturer, type, or model batteries.
- Keep the battery against high temperature. Otherwise it will cause battery heat, get into fire or lose some function and reduce the life.
- When battery run out of power, please charge your battery timely (≤15day).
- Please use the matched or suggested charger for this battery.
- If battery emit peculiar smell, heating, distortion or appear any abnormity during working or storage, please stop using and take it out from device.
- If the battery leaks and get into the eyes or skin, do not wipe, instead, rinse it with clean water and see doctor immediately.
- Please far away from children or pets.
- Do not put disuse battery into a fire or water.
- It is strictly prohibited any series between the battery packs. Any requirements on serials connection, please contact MASTER BATTERY, S.L. for details.

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8. Operation Instruction

8.1 Charge and discharge

8.1.1 Charging current: Do not surpass the largest charging current that specification stipulated.

8.1.2 Charging voltage: Do not surpass the highest limited voltage that specification stipulated.

8.1.3 Charging temperature: within temperature scope that specification stipulated.

8.1.4 Charge with constant current, then with the constant voltage, no reverse charge, which is dangerous.

8.1.5 Special note:

Short time doesn't affect the use of the battery overcharge too, but for a long period of time over discharge or over charge can affect the function of the battery failure, or the battery can't use permanent, appear serious safety hazards, need long time floating please use the recommended floating model specification. Battery when not in use for a long time, because of its own self-discharge characteristics can also cause discharge, to prevent the occurrence of a discharge, battery should maintain a certain capacity, maintain the voltage at 50% state of SOC.

9. Other Chemical Reaction

Because batteries utilize a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges, the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the discharge time is much shorter than the normal after full charged, even battery is charged correctly, and this may indicate it is time to change the battery.

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