

## 48 VOLT / 1200 AMP HOUR SPECIFICATIONS AND PARAMETERS

This data pertains to the 48V / 1200AH LIFEP04 Battery System using two 48V 600AH LIFEP04 Battery Cabinets in parallel



Nominal Voltage	51.2V
Normal Capacity	1200Ah
Internal Resistance	≤20mΩ
System information, Display & Communication	Consists of two 48V 600Ah systems interconnected in parallel, CAN Bus 2.0A, 500kBit/sec, 11-Bit Identifiers, each 48V 600Ah battery cabinet will interconnect to each other in parallel with 4 gauge (red/black labeled) cables, with 1/0 gauge cable for final combined connection to inverter.
<b>Standard Charge Parameters</b>	
Charging temperature range	0~50°C
Normal charge voltage	58.4 ±0.1V
Recommended float charge voltage(Standby)	55.6 ±0.1V
Allowed MAX charge current	150A / 200A / 300A / 350A @Battery initial Temp 25 ±5°C
Recommended charge current	≤200A
<b>Standard Discharge Parameters</b>	
Discharge temperature range	-20~60°C
Output Voltage Range	40~58.4V
Allowed discharge current	200A / 250A / 300A / 350A (Optional setting)
20 Second surge current	400A / 500A / 600A / 700A (Optional setting)
Discharge Cut-off voltage	40V
<b>CAN Communication</b>	
Parameters and Process Values (that will communicate from CAN)	<ul style="list-style-type: none"> <li>• Battery Charge Voltage</li> <li>• Battery Charge Current Limitation</li> <li>• Discharge Current Limitation</li> <li>• Discharge Voltage Limit</li> <li>• SOC</li> <li>• Alarm/Alert Messages</li> <li>• State of Health (SOH)</li> <li>• Battery Voltage</li> <li>• Current</li> <li>• Temperature</li> </ul>
System Warnings (that will communicate from CAN)	High/Low Voltage, High/Low (Discharge and Charge) Temperature, High/Low Current, Contactors/Connections

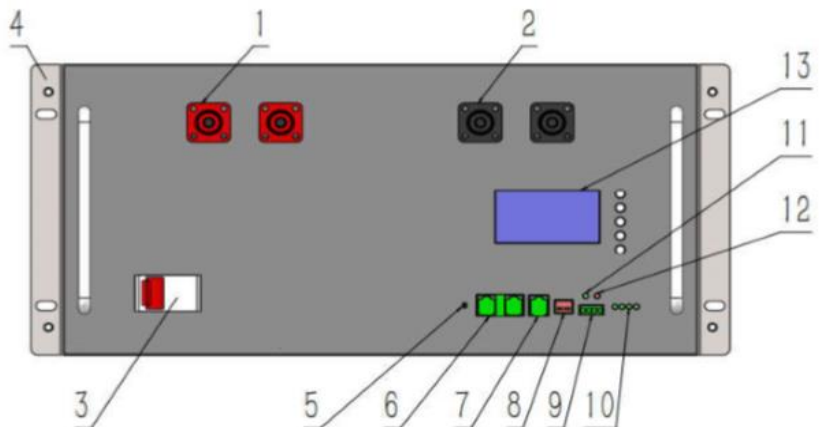
## 48 VOLT / 600 AMP HOUR SPECIFICATIONS AND PARAMETERS

This data pertains to each 600AH LIFEPO4 Battery Cabinet, consisting of six 48 Volt 100 Amp Hour Batteries and one Battery Control Unit summarizing and protecting data from each of the six internal Battery Management Systems.

Nominal Voltage	51.2V
Normal Capacity	600Ah
Internal Resistance	≤20mΩ
System information, Display & Communication	Consists of six 48V 100Ah Hour Batteries (and BMS) in parallel connected to one main Control Unit with LCD Display which displays Battery voltage, current, SOC, temperature, each 600AH System has it's own ON/OFF Switch, RS485, RJ45 and CAN Bus connectivity, each 48V 100Ah battery will interconnect to each other in parallel with 8 gauge (red/black labeled) cables.
<b>Standard Charge Parameters</b>	
Charging temperature range	0~50°C
Normal charge voltage	58.4 ±0.1V
Recommended float charge voltage(Standby)	55.6 ±0.1V
Allowed MAX charge current	150A / 200A / 250A / 300A / 350A (Optional setting)
Recommended charge current	≤150A
<b>Standard Discharge Parameters</b>	
Discharge temperature range	-20~60°C
Output Voltage Range	40~58.4V
Allowed discharge current	200A / 250A / 300A / 350A (Optional setting)
20 Second surge current	200A / 250A / 300A / 350A (Optional setting)
Discharge Cut-off voltage	40V
<b>Cabinet / Rack Dimensions</b>	
Each Battery Rack Dimension	Length: 24 inches
	Width: 24 inches
	Height: 48 inches
Weight	820lbs ±5lbs (Each 100AH approx. 110LBS)

### 48V / 100AH BATTERY

1	Positive Terminals
2	Negative Terminals
3	Switch
4	Fastening Holes
5	RS232
6	RS485
7	RJ45
8	Reset Button
9	Dial Switch
10	LED Indicator Light
11	
12	
13	LCD Display



Rendered Image of 48 Volt 100

## GENERAL SYSTEM SPECIFICATIONS AND PARAMETERS

This data pertains to both the entire 1200AH System and each 600AH Cabinet respectively

Storage Recommendations			
Storage Temperature & Humidity Range	Short Term: < 1 month	-20~35°C,	45~75%RH
	Long term: >1 month	-10~30°C,	45~75%RH
Self-discharge rate	Residual capacity	≤3% per month; ≤15% per year	
	Reversible capacity	≤1.5%per month; ≤8% per year	

Testing Conditions: Ambient Temperature: 25±5°C; Humidity:45%~75%.

Item	Criterion	Condition	
Internal Impedance	≤20mΩ	Test the internal resistance of 50% SOC battery pack with 1 kHz AC internal resistance test instrument.	
Capacity	Battery's Ah Rating	After the battery was fully charged, it was discharged at 0.33C, and the discharge capacity was recorded.	
MAX charge Current	Battery's Setting	Charging with this current for more than 0.5h and the added temperature of battery pack less than 20°C.	
MAX discharge Current	Battery's Setting	Discharging with this current for more than 30min and the added temperature of battery pack less than 35°C.	
(DOD%100)	≥2000 cycle	Discharge with the current of 50A until it can't discharge, and then rest it for 1h. Charge the battery following CC(50A)/CV(58.4V) mode to full capacity, and then rest it for 1h. Repeat above process until full charged capacity is no more than 80% of normal value. Accumulated times is defined as cycle life.	
Discharge Temperature Characteristics	-20°C	≥70%	At 25±5°C discharge the battery with the current of 50A to the cut-off voltage. Store the battery at various temperatures for 2h and discharge the battery with 50A to the cut-off voltage. Record the ratio between discharging & charging capacity.
	0°C	≥80%	
	25°C	100%	
	55°C	≥95%	
Charge Retention ability	remain capacity≥90%	Charge the battery to full capacity and store it for 28days, and then discharge it with 50A to the cut-off voltage.	

## CIRCUIT PROTECTIONS

This data pertains to both the entire 2400AH System and each 600AH Cabinet respectively

Test item	Content	Criterion
Over charge	Over-charge protection for each cell	3.80±0.03V
	Over-charge release for each cell	3.60±0.05V
	Over-charge release method	Under the release voltage
Over discharge	Over-discharge protection for each cell	2.50±0.05V
	Over-discharge release for each cell	2.80±0.05V
	Over-discharge release method	Charging
Over & Lower Temperature	Battery over temperature	Protection @65 ±5°C
		Release @55 ±5°C
	Battery Lower temperature	Protection @-20 ±5°C
		Release @-10 ±15°C

## INSTALLATION NOTES

Detailed instructions will be included with your LIFEP04 Battery System. For Server Rack-Style Cabinets each battery and Control unit will be labeled (ex: 1-2, 1-3, 1-4, 1-5, 1-6..., CU) for easy installation.

Put the six battery boxes and control boxes into cabinet in sequence; Installed 1-1 in the bottom; Installed 1-6 in the top; (Refer to the logo on panel and line)

- Connect the battery boxes and control boxes by communication line;
- Connect the battery boxes and control boxes by power line ( need to be one-to-one correspondence with the battery boxes), you should connect 1-1 in the first, then connect 1-2, 1-3, 1-4, 1-5, 1-6.



Note: Stock Image is to show labeled installation sequence, the stock image might differ from actual finished product; ex: case color, terminal style.

**Caution: Please note that positive and negative terminals are short-circuited before power-on, it can' be reversed.**

## STORAGE AND TRANSPORTING

- Battery should be stored in  $-20^{\circ}\text{C} \sim 35^{\circ}\text{C}$  temps where it's dry, clean, shade, and well-ventilated.
- The battery should be stored in 50% SOC during transportation.
- The battery needs to be charged every 6 months if out of use
- Keep the battery against dropping, turning over and serious stacking during loading.
- 

## WARNINGS AND TIPS

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

### Warning!

- The battery must be far away from heat sources, high voltage, and avoid to be exposed in sunshine for extended periods
- Never store the battery near liquids or get the battery or any part of the cabinet wet.
- Never reverse two electrodes when use the battery.
- Never disassemble the battery without manufacturer's permission and guidance.
- Never knock, throw or trample the battery.

### Tips!

- 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 runs out of power, charge your battery in a timely ( $\leq 15$ day).
- If battery emits peculiar smell, heating, distortion or appear any abnormality during working or storage, please stop using and contact your dealer.
- 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.
- It is strictly prohibited to run any other battery brands, styles or types with this system.

## YOUR DEALER INFORMATION: