LiFePO4 Battery 48V100Ah

沃特玛®
OptimumNano

Cylindrical Lithium Iron Phosphate Battery

OPT48100-RACK
(IFR32650, 15S20P)

Brief Introduction

OptimumNano always develop and produce **32650** cells to or assemble battery packs to satisfy the requirements of high performance and operational reliability of our customers. We also have the **14500/18650/22650/26650** cells to meet all your requirements.

Key Features

- Attractive cycle life
- Extended safety performance
- Wide operating temperature range
- Unrivalled high temperature performance
- Green energy without metal contaminant
- High capacity
- Steady output voltage
- Little self-discharge
- Double safety protection
- Withstanding very high level of vibrations and shocks

Safety Characteristics

- Over-charge/Over-discharge Ability to withstand over-charge/withstand over-discharge, and there is no fire, no exploding and work well
- Short circuit Ability to withstand short circuit, and there is no fire, no exploding
- Acupuncture Ability to withstand nail puncturing, and there is no fire, no exploding
- Thermal shock Ability to withstand thermal shock, and there is no fire, no exploding

● Electrical Charateristics

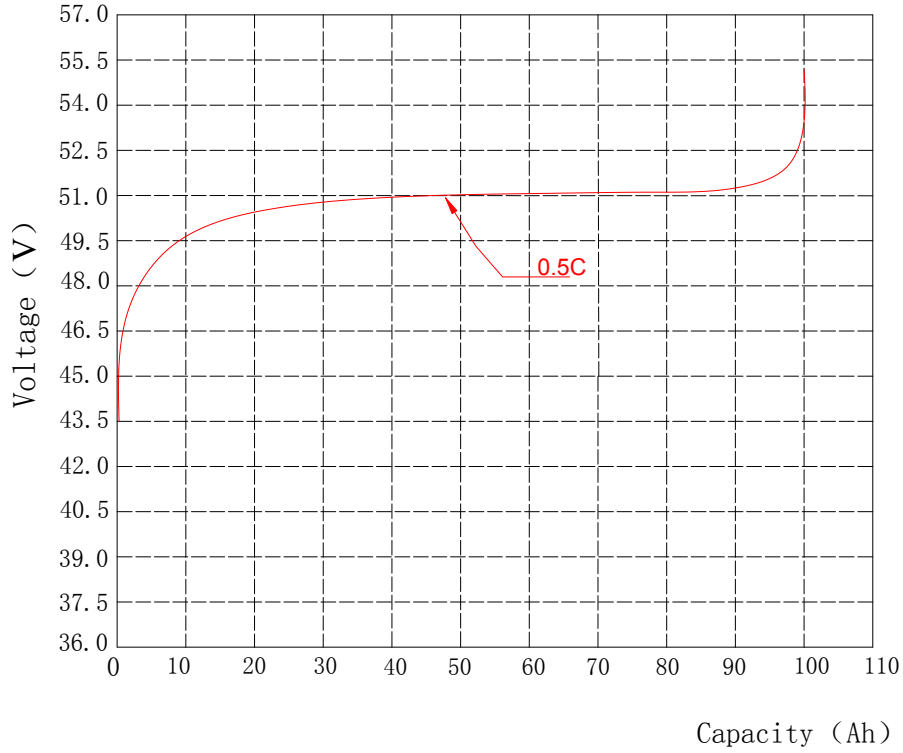|	
Nominal Voltage	48V
Nominal Capacity (at 0.5C, 25 degC)	100Ah
Min. Capacity (at 0.5C, 25 degC)	95h
Expected Cycle Life	More than 3000 cycles, with 0.2C charge and discharge rate, at 25 ℃, 80%DOD

● Mechanical Characteristics

Depth	540±1mm
Width	482.6±1mm (19inchs, 442mm without foot mounting)
Height	176±1mm(4U)
Net Weight	~65Kg

● Operation Conditions

Charge Method	CC-CV
Max. Charge Voltage	54.75V
Continuous Charge Current	Max.100A
Charge Temperature	0℃～45℃
Continuous Discharge Current	Max. 100A
Peak Instant Discharge Current (10 Seconds)	110A
Discharge Cut-off Voltage	37.5V
Discharge Temperature	-20℃～65℃
Storage Temperature	-20℃～45℃
Self Discharge (Stored at 50% SOC)	<= 3%/month

charge curve

25℃±5℃

X-axis: Capacity（Ah）
Y-axis: Voltage（V）
Curve labeled: 0.5C

Diploid discharge curve

25℃±5℃

X-axis: Capacity（Ah）
Y-axis: Voltage（V）
Curve labeled: 1C

Cells Dimension

70 ± 0.2

$\varnothing12.5$

$\varnothing15.5$

$\varnothing32.2\pm0.5$

Battery Picture

RS232/485(LCD display not included)

RS232/485(LCD display included)
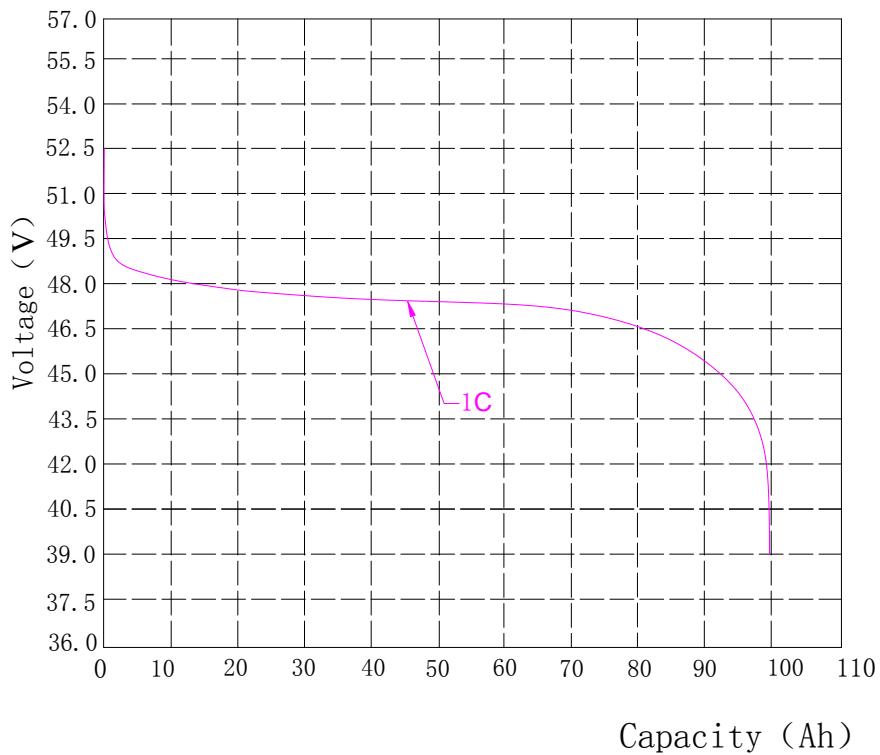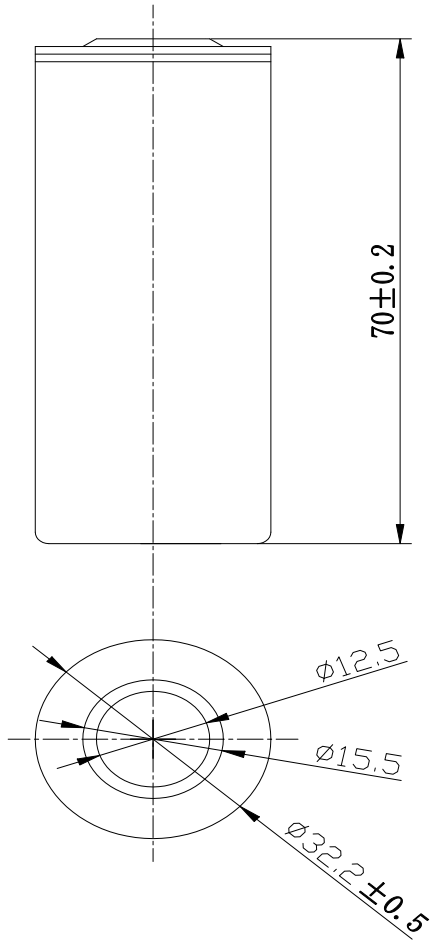
Function of PCM/BMS (Battery Management System)

| Item	Content	Criterion
Communication Port	RS485 or RS232	To show the battery voltage, temperature, SOC, Faults alarming and so on
Cell voltage alarming	High voltage larming	3750±20 mV (can be set)
	High voltage larming release	3600±20 mV (can be set)
	Low voltage larming	2800±20 mV (can be set)
	Low voltage larming release	3000±20 mV (can be set)
Over charge Protection	Over charge detection voltage	3800±20 mV (can be set)
	Over charge release voltage	3600±20 mV (can be set)
	Release condition	The cell voltage is up to the release voltage or with discharge curent ≥1A
Over discharge protection	Over discharge detection voltage	2500±50 mV (can be set)
	Over discharge detection delay time	5 ±1S (can be set)
	Over discharge release voltage	2800±50 mV(can be set)
	Release condition	With charge current >1A or grid recover
Over current protection	Max. charge current	**100±1A (can be set, 0A~100A)**
	Over charge current detection current	**110±1A (can be set, 0A~110A)**
	Over charge detection delay time	5±1S (can be set, 1S~600S)
	Max. discharge current	**-100±1A (can be set, 0A~100A)**
	Over discharge current detection current	**-110±1A (can be set, 0A~110A)**
	Over discharge detection delay time	5±1S (can be set, 1S~600S)
	Release condition	Detect every 1 min and the current less than protection current, or detect discharge current
Cells balancing	Balancing voltage	3450 mV(can be set, 3000mV-4500mV)
	Balancing voltage different	50mV(can be set, 50mV-100mV)
	Balancing end voltage	30mV(can be set, 10mV-30mV)
Temperature Protection	High temperature alarm	60±3℃(can be set, -20-60℃)
	High temperature protection	65±3℃(can be set, -20-65℃)
	Low temperature alarm	-10℃±3℃(can be set, -20-60℃)
	Low temperature protection	-20℃±3℃(can be set, -20-60℃)
Low temperatureheating		Optional(no for standard type if no request)

1. Overview
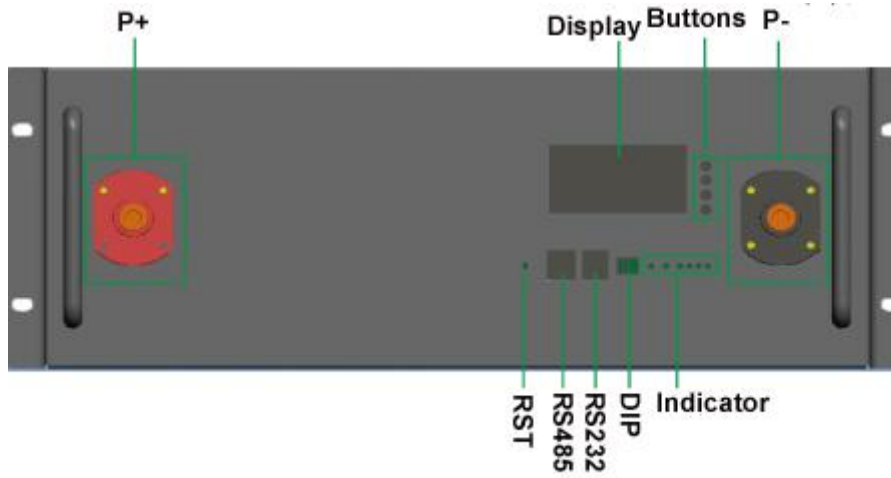
2. Description for the buttons
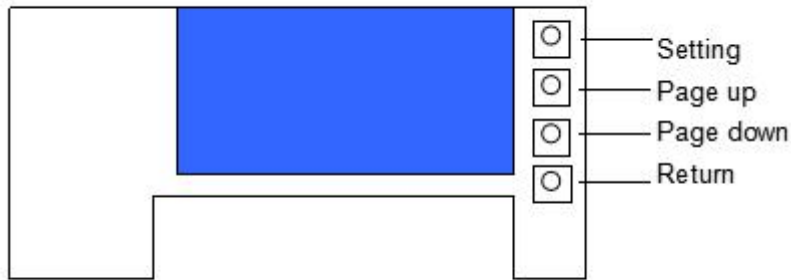
3. Display instructions(just sample for reference)

XXXXXX **Welcome** **2016-12-30 16:55**	Picture 1: This is what the BMS show when awakening, and to get to normal parameters. Then it will automatically jump to the Picture 2. At this moment, all the buttons do not work.
Bat_Volt:51. 16V **Bat_Curt:0.00A** **Rem_Capt: 70.71Ah** **Sys_Stat: Standby**	Picture 2: To show the battery voltage, current, SOC and status. Press "setting", turn to Interface 2nd to set all the parameters; The "return" do not work; Press "page down", turn to Interface 3rd; Press "page up", turn to Interface 7th

Cycles : 35Ah **Amb_TemP: 19.3℃** **Pow_Temp: 26.7℃** **AlarStat: None**	Picture 3:To show the battery used capacity, ambient temperature, power temperature and the BMS alarming status. Press "setting", turn to Interface 8th to set all the parameters; The "return" do not work; Press "page down", turn to Interface 4th;; Press "page up", turn to Interface 2nd
Cel_Volt mV 01~08 **3342 3343 3345** **3343 3344 3343** **3345 3346**	Picture 4:To show the voltage from B1-B8. Press "setting", turn to Interface 8th to set all the parameters; The "return" do not work; Press "page down", turn to Interface 5th;; Press "page up", turn to Interface 3rd
Cel_Volt mV 09~16 **3345 3345 3346** **3346 3345 3345** **3345**	Picture 5:To show the voltage from B9-B15. Press "setting", turn to Interface 8th to set all the parameters; The "return" do not work; Press "page down", turn to Interface 6th;; Press "page up", turn to Interface 4th
Cel_TemP℃ 01~04 **17.6 17.2** **17.6 17.6**	Picture 6:To show the temperate from 1 to 4 Press "setting", turn to Interface 8th to set all the parameters; The "return" do not work; Press "page down", turn to Interface 7th;; Press "page up", turn to Interface 5th.

4. DP number: It is used for battery parallel with binary system   and the four bottoms represent 1, 2, 4,8

- If   you use one battery only, pls keep all the bottoms down, like this
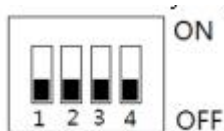
- if you want to connect the battery in parallel, then you should change the the DP number(stated in the BMS sepecification)
- After change the DP number, pls "RST"

Storage and Transportation

     1. Based on the character of cell, proper environment for transportation of LiFePO4 battery pack need to be created to protect the battery.

     2. During transportation, 50% SOC must be kept to ensure that short circuit, appearance of liquid in the battery or immersion of battery in liquid never occur.

     3. Battery should be kept at -20℃～45℃ in warehouse where it's dry, clean and well-ventilated.

     4. During loading of battery, attention must be paid against dropping, turning over and serious stacking.

Warnings and Tips

In order to prevent the battery leaking, getting hot and exploding, please pay attention to preventing measure as following:

Warning!

- Never throw the battery into water, keep it under dry, shady and cool circumstance when not use.
- Never upside down the positive and negative.
- Never connect the positive and negative of battery with metal.
- Never ship or store the battery together with metal
- Never knock, throw or trample the battery.
- Never cut through the battery with nail or other edge tool.

Tips!

- Never use or keep the battery under the high temperature. Otherwise it will cause battery heat, get into fire or lose some function and reduce the life. The proposed temperature for long-term storage is 10-45℃.
- Never throw the battery into fire or heating machine to avoid fire, explosion and environment pollution; scrap battery should be returned to the supplier and handled by the recycle station.
- Never use the battery under strong static and strong magnetic field, otherwise it will destroy the protecting device.
- If battery leaked, the electrolyte get into eyes, please don't knead, please wash eyes by water and send to hospital. Otherwise it will hurt eyes.
- If battery emit peculiar smell, heating, distortion or appear any unconventionality during using, storage or charging process, please take it out from device or charge and stop using.
- Never cut the battery in socket directly; please use the stated charger when charging.
- Check the voltage of battery and relevant connectors before using the battery. It can't be used until everything turns out to be normal.
- Prior to charging, fully check the insulativity, physical condition and ageing status, since breakage and ageing are never allowed; the pack voltage must not be less than the cutoff voltage, if not, it's abnormal and that battery needs to be labeled. The user should contact our Customer Service Dept and it can't be charged until repaired by our staff.
- The battery should be stored in 50% SOC. It needs to be charged once if out of use for as long as half a year.
- Clean the dirty electrode, if any, with a clean dry cloth, or poor contact or operation failure may occur

Contact Us

OptimumNano Energy Co., Ltd

Address: No. 68, Lanjing North Road, Pingshan New District, Shenzhen, China 518118

Tel: +86-755-87640787

Fax: +86-755-84630785

E-mail: info@optimumchina.com   **Web: www.optimumnanoenergy.com**