



Specification Approval Sheet

Name: LiFePO4 Battery

Model:34436

SPEC:LFP-32700-4S16P-12.8V 100Ah-PCM-帶外壳

Number:YA004F0417001/8174320416001

Project: /

Approved By	Checkup	Make
Shaopeng Yi	Rongzhong Peng	Yuanhui LIU
2022-5-12	2022-5-12	2022-5-12

Customer Confirmation	Signature	Date
	Company Name :	
	Stamp :	

Please sign back specification before bulk order

436 Kato Terrace, Fremont, CA 94539 U.S.A.

Tel: 510.687.0388 Fax: 510.687.0328

www.Tenergy.com



Tenergy Corporation

436 Kato Terrace

Fremont, CA 94539

Tel: 510.687.0388 Fax: 510.687.0328

www.Tenergy.com email: sales@tenergy.com

Amendment Records

Revision	Description	Issued Date	Approved By
A0	New release	2021-11-23	Yuanhui LIU
A1	Example Change the battery number (17PInstead of 16P)	2022-5-4	Yuanhui LIU
A2	Change the PCM	2022-5-12	Yuanhui LIU



1 Scope

This document describes the performance characteristics and testing methods for LiFePO₄ battery produced by Tenergy Corporation.

2 Product type and model number

2.1 Product type

LiFePO₄ Battery

2.2 Model number

34436

3 Rated performance

Form 1: Battery rated performance

No	Item	Rated performance	Remark
1	Rated capacity	Nominal 100Ah Min 94.5Ah	Standard discharge after standard charge
2	Nominal voltage	12.8V	Mean operation voltage during standard discharge after standard charge
3	Voltage at end of discharge	8.8V	Discharge cut-off voltage
4	Recommend Charge voltage:	13.8V	
5	Maximum Charge voltage	14.4±0.2V	
6	Shipments voltage	13.2±0.15V	SOC≤30 %
7	Impedance	<50mΩ	
8	Standard charge	Constant current 0.2C ₅ A Constant voltage 13.8V Cut-off current ≤0.02C ₅ A	
9	Standard discharge	Constant current 0.2 C ₅ A End voltage 8.8V	
10	Maximum Charge Current	Constant current 0.5C ₅ A Constant voltage 13.8V Cut-off current ≤0.02C ₅ A	
11	Maximum continuous discharge current	≤100A	
12	Operation temperature range	Charge: 10~45℃	60±25%R.H
		Discharge: -20~60℃	
13	Storage temperature	≤1 month: -20 ~ 45℃	60±25%R.H Best 10~25℃ for long-time storage
		≤3 months: -10 ~ 30℃	
		≤1 year: 0 ~ 30℃	
14	Weight	Approx:12.5Kg	
15	Dimension(mm)	Thickness*Width*Height (max)	330 ± 1*172 ± 1*215 ± 1*含五金螺母 220 ± 1mm
16	output wire length (mm)	Excluding the connector	/

4 Electrical performances

Form 2: Battery electrical performances

No	Items	Test procedure	Requirements
1	Nominal voltage	The average value of the working voltage during the whole discharge process.	13.8V
2	Discharge performance	The discharge capacity of the battery, measured with 0.2 C ₅ A down to 8.8V within 1 hour after a standard charge at 25±5°C	Discharge ≥ Minimum capacity
3	Cell Capability of keeping electricity	After 28 days storage at 25±5°C, after having been standard charged and discharged at 0.2 C ₅ A to 2.0V (the residual capacity is above 85% of nominal capacity)	Discharge time ≥ 4.25h
4	Cycle life	Charging/discharging in the below condition: Charge: standard charge at 25±5°C Discharge: 0.2C ₅ A to 8.8V Rest time between charge/discharge: 30min Until the discharge capacity < 70% of NC	> 2000 cycles
5	Cell energy storage performance	(Within 3 months after manufactured) The battery is charged with 0.2C ₅ A to 20-50% capacity and stored at ambient temperature 25±5°C, 65±20%RH for 12 months. After the 12 months storage period the cell is fully charged and discharged to 2.5V with 0.2 C ₅ A	Discharge time ≥ 4h

5 Standard test conditions

Test should be conducted with new batteries within one week after shipment from our factory and the batteries shall not be cycled more than five times before the test. Unless otherwise defined, test and measurement shall be done under temperature of 20±5°C and relative humidity of 45~85%. If it is judged that the test results are not affected by such conditions, the tests may be conducted at temperature 15~30°C and humidity 25~85%RH.

6 Cautions in use

To ensure proper use of the battery please read the manual carefully before using it.

6.1 Handling

- Do not expose to, dispose of the battery in fire.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Avoid shorting the battery.
- Avoid excessive physical shock or vibration.
- Do not disassemble or deform the battery.
- Do not immerse in water.
- Do not use the battery mixed with other different make, type, or model batteries.
- Keep out of the reach of children. **Do not allow children to replace batteries without adult supervision.**

6.2 Charge and discharge

- Battery must be charged in appropriate charger only.
- Never use a modified or damaged charger.
- Do not leave battery in charge over 24 hours.

6.3 Storage

- Store the battery in a cool, dry and well-ventilated area.

6.4 Disposal

Regulations vary for different countries, Dispose of in accordance with local regulations.

7 Battery operation instruction

7.1 Charging

Charging current: Cannot surpass the biggest charging current which in this specification book stipulated.

Charging voltage: Does not have to surpass the highest amount which in this specification book stipulated to decide the voltage.

Charging temperature: The battery must charge in the ambient temperature scope which this specification book stipulated. Use the constant electric current and constant voltage to charge. Do not reverse charge. When the positive electrode and the cathode meet together, damage can be made for the battery.

7.2 Discharging current

The discharging current does not have to surpass this specification book stipulation the biggest discharging current, the oversized electric current electric discharge can cause the battery capacity play to reduce and to cause the battery heat.

7.3 Electric discharge temperature

The battery discharge must carry on in the ambient temperature scope which this specification book stipulated.

7.4 Over-discharges

Short time of excessively discharge will not affect the usage. But the long time excess discharge can damage the battery performance and cause the function losing. When the battery is not used for a long time, because of its automatic flashover characteristic, it may excessively discharges. To prevent excessively discharge occur, the battery should maintain certain electric quantity.

7.5 Storing the batteries

The battery should store in the product specification book stipulation temperature range. If has surpasses above for three months the long time storage, suggested you should carry on additional charge to the battery.

8 Other the 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 batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

9 Note

Any other items which are not covered in this specification shall be agreed by both parties.

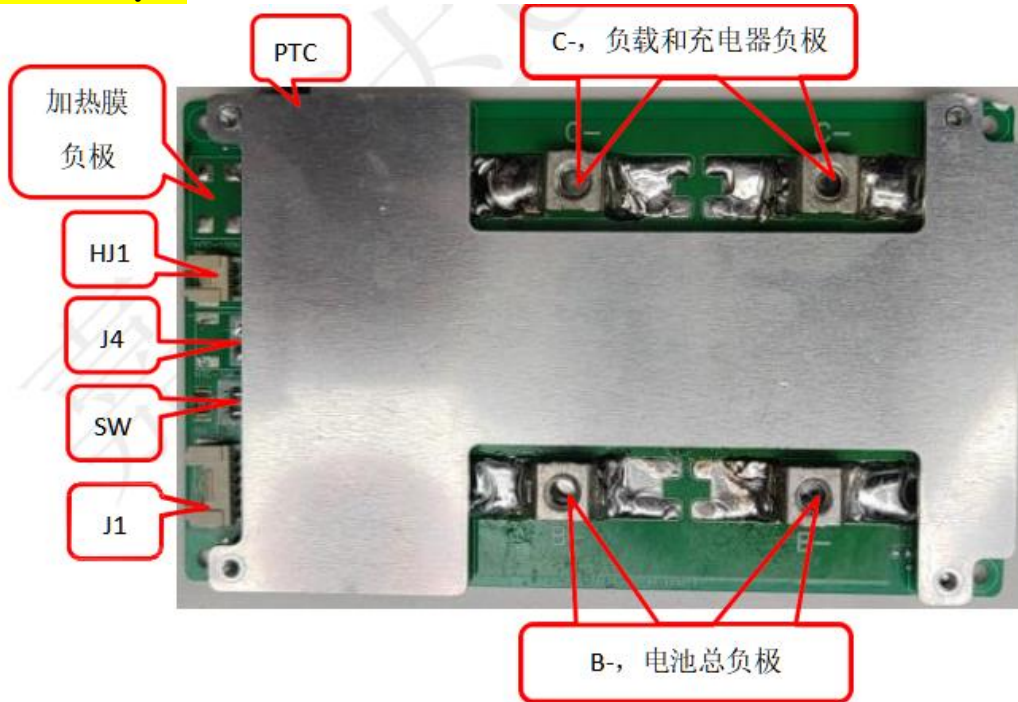
10 PCM performance

10.1 Electrical characteristics

Form 3: PCB electrical characteristics

项目	详细内容	标准
过充电保护 Over charge Protection	过充电检测电压 Over charge detection voltage	3.7~3.8V
	检测延迟时间 Detection delay time	500~1500mS
	过充电解除电压 Over charge release voltage	3.5~3.6V
过放电保护 Over discharge protection	过放电检测电压 Over discharge detection voltage	2.15~2.3V
	检测延迟时间 Detection delay time	500~1500mS
	过放电解除电压 Over discharge release voltage	2.5~2.8V
	过放电保护解除条件 Release conditions of over discharge protection	断开负载或者充电
充电过流 Charge Over-Current	充电过流保护电流 Over-Current charge protection	60±15A
	充电过流保护延迟时间 Over-Current charge protection delay time	500~1500mS
	充电过流保护解除条件 Discharge condition of charge overcurrent protection	延时 1S 后自动恢复
放电过流 Discharge Over-Current	额定工作电流 Rated operational current	≤100A
	放电过流保护 1 Over-Current discharge protection 1 (Only in normal mode)	280±60A
	放电过流保护 1 延迟 Over-Current protection 1 delay time	100~400mS
	放电过流保护 2 Over-Current discharge protection 2 (Only in normal mode)	560±150A
	放电过流保护 2 延迟 Over-Current protection 2 delay time	10~40mS
	放电过流保护 1/2/3 释放 Over-Current protection 1/2/3 release	断开负载或者充电
短路保护 Short circuit protection	放电短路保护 Short circuit discharge protection	1130±300A
	放电短路保护延迟 Short circuit protection delay time 迟	200~800uS
	放电短路保护释放 Short circuit protection release	断开负载或者充电
温度保护 Temperature protection	充电高温保护温度 Charging high temperature protection temperature	50~60℃
	充电高温保护恢复温度 Charging high temperature protection to restore temperature	46~56℃
	充电低温保护 Charge low temperature protection	-7~3℃
	充电低温恢复 Charge low temperature protection release	-3~7℃
	放电高温保护温度 Discharge high temperature protection temperature	73~83℃
	放电高温保护恢复温度 Discharge high temperature protection restores temperature	55~65℃
FET 放电高温保护 Discharge high temperature protection(内置 built-in)	温度保护值 Temperature protection value	82~98℃
	温度保护释放值 Temperature protection release value	50~80℃
均衡功能 Equalization function	开启电压 Opening voltage	3.45~3.55V
	均衡电流 Equalizing current	200~250mA
	均衡类型	脉冲方式
内阻 Internal resistance PCB	保护板线路内阻 Protection plate line resistance	10~20mR
Current consumption 电流消耗	工作时电路内部消耗 Current consume in normal operation	≤50 μA (
PCB	160±0.5mm * 105±0.5mm * 22±2mm(长度*宽度*高度)	
备注 note	支持串联保护, 最高支持 4 组串联 Support series protection, up to 4 groups of series	

10.2 PCB Layout



11 Labe

12 Battery pack drawings
Drawing 1: Battery pack drawings


NO	电池类型 Battery type	电池尺寸 (mm)Dimensions D*H (max)	导线长度 (mm) Lead exposure L	端子头方向 Terminal head direction	浸锡长度 Immersion tin size
1	磷酸铁锂电池 LiFePO ₄ Battery	330±1*172±1*215±1*含五金 螺母 220±1mm	/	/	/

13 Packaging drawings

