

# Shenzhen Fconegy Power Solution Co.,Ltd

深圳市电思维科技有限公司

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## Li-ion Battery Pack Specification

Product Item: 26650 LiFePo4 4S4P solar Energy Storage battery

### 1. Normal Specialties

NO	Item	Common Idex		Note
1	Nominal Capacity	Typical Capacity	16Ah	Standard Charged discharge at 0.2C <sub>5</sub> A,Repeat 5 times get average .
		Minimum Capacity	16mAh	
2	Typical Voltage	12.8V		Work Voltage
	Charge cut-off voltage	14.6V		
3	Discharge Cut-off Voltage	8.0V		Discharge Cut-off Voltage
4	Max. Charge Voltage	15V		Charge Max Limited Voltage
5	IR	≤150Ω		At Semi-state,use AC measured the IR (Less than a week after using the ship and cycle times of less than five times the new battery measurement )
6	Typical Charge	Continue Current: 0.2C <sub>5</sub> A Continue Voltage: 4.20V Cut-off Current: 0.02C <sub>5</sub> A		Charge Time: About 5hours
7	Typical Discharge	Continue Current: 0.2C <sub>5</sub> A Cut-off Voltage: 3.0V		
8	Way of Charge	CC/CV		
9	Range of Temperature	Operating Charging Temperature		0 ~ +45℃
		Storage Humidity		60±25%RH
		Operating Discharge Temperature		-10 ~ +60℃
10	Fast Charge	Continue Current: 1C <sub>5</sub> A Continue Voltage: 4.20V Cut-off Current: 0.02C <sub>5</sub> A		Charge Time: About 2.5 hours
11	Fast Discharge	Continue Current: 1C <sub>5</sub> A Cut-off Voltage: 3.0V		
12	Max.Continue Charge Current	1C <sub>5</sub> A		
13	Max.Continue Discharge Current	2C <sub>5</sub> A		

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14	PCM	SEIKO G3J+2*8205	SEIKO PCM
15	PCM safety protection	*Over charge protection *Over discharge protection *Over voltage protection *Under voltage protection *Over current protection *Short circuit protection	
16	Storage Temperature Scope	Discharge :-10 ~ +60°C ( Less than one year:-20 ~ +25°C ; Less than 3 months :-20 ~ +40°C)	At goods delivery situation, Humidity scope: 60±25%RH
17	Weight	Appropriate: 700g	±0.5g
18	Dimensions	28*135*150mm	

## 2.Appearance

Battery doesn't affect the commercial value of its shortcomings,such as: mechanical damage,deformation,discoloration. No such surface:leakage,stains,rust,leakage and other defects affecting goods marke value.

## 3.Performance

### 3.1 Standard Test Conditions

If not specified, the test shall be 25%-85% of the environment ,carried out at 20±5°C humidity ,the humidity is too much will effect on the accuracy of test results, the test must be used for no more than a new battery after shipment from our factory,and the cells not be cycled more than 5 times before the test .

### 3.2 Measuring Instrument or Apparatus

1.1.1 Dimension Measuring Instrument. Accuracy of 0.01mm caliper range is 0-200mm

1.1.2 Voltmeter and Ammeter.

Voltmeter accuracy of ±5mV, range is 0-20V; Ammeter accuracy of present current ±(0.3%±30mA)

### 3.3 Nominal Charged Test Conditions

At20±5°C,the testing process that standards as follows: first 0.5 C<sub>5</sub>A constant battery charge to 4.20V,when the charge current decreases, then charged to 4.20V constant current is reduced to 0.02C<sub>5</sub>A,the charging time is about 3 hours.

### 3.4 Nominal Discharged Test Conditions

At20±5°C,battery constant discharge to 3.0V,Unless otherwise defined, 30min, rest period after charge,30min,rest period after discharge.

### 3.5 Battery Performance Test

No	Item	Standard	Test Conditions	Test Ways
1	Leakage Test	No leakage	Typical full charged new battery	Standard charge condition,full charge after 60±5°C temperature, humidity 60±10%RH storage one month.
2	Vibration Test	80%	Discharge Temperature	

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3	Drop Test	100%	23°C Discharge Temperature	After standard charge, the battery is to be tested as following conditions: Amplitude:1.6mm Frequency:10~55Hz(sweep:1Hz/min) Direction: X/Y/Z axis for 30min. The battery is to be tested in three mutually perpendicular to each axis.  Drop the battery in the shipment condition(full- charge)from 1m height onto thicker concrete with p-tile on it 2 times each of obverse.
		95%	45°C	
		≥90%	2C Dicharge	
		No electrolyte leakage, smoke	Typical full charged new battery	
		No electrolyte leakage, smoke or explosion	Typical full charged new battery	
4	Squeeze Test	No electrolyte leakage, smoke	Typical full charged new battery	Battery placed between two flat metal plate ,applied 13KN ( 1.72Mpa ) force,and continued for 30 min.
5	Short-Circuit Test	No explosion,no fire.The temperature of the exterior cell casing shall not exceed 150°C	Typical full charged new battery	At normal temperature about 25±5°C , After standard charge, the battery is to be short-circuited by connecting the positive and negative terminals of the battery with copper wire having a maximum Resistance load of <10mΩ.
6	Impact Test	No fire, no explosion	Typical full charged new battery	The battery to be fully charged with standard charging condition, and put a rod with diameter 56mm on the cell, and then heavy block (weight 10Kg) crash on the cell from a certain height(height=100cm).
7	Over-discharge Test	No fire, no explosion	Typical full charged new battery	The fully discharged cell is continually discharged for 2.5hours with 1 C <sub>5</sub> A current.
8	Prick Test	No fire, no explosion	Typical full charged new battery	The full charged battery with a needle φ3mm at speed 10-40mm/s from perpendicular to the battery plates through (needle stays in the battery)

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## 4. Warning !!!

### 4.1 Battery usage should notice follow warnings:

- \* Do not directly heated or thrown in fire.
- \* Do not store at environment of high tep (over 60°C)
- \* Do not directly short circuit battery
- \* Do not with the acid corrosion of battery.
- \* Do not thrown water or swallow in other Liquid , do not store in humidity environment .
- \* Do not beat and impact battery.
- \* Prohibit changing the batteries and battery internal anatomical structures.
- \* Prohibit usage a damaged battery
- \* Prohibit the battery immersed in liquid which like water,sea water and non-alcoholic drinks, juice ,coffee or other beverages.

### 4.2 Charging Notice

- \* Charge temperature at 0°C~+45°C
- \* Do not charge battery at the contrary direction.
- \* Charging method is to charge the battery must not directly prohibit the use of the alternating current to charge the battery.
- \* Use specified charger and according to our company manual to use the proper ways to use our products while charging.

### 4.3 Discharging Notice

- \* Discharge temperature at 0°C~+60°C.
- \* Discharge set Min.Discharge voltage not less than 3.0V.
- \* Discharge current do not over specification ruled Max current.

### 4.4 Storge Notice

- \* After a long time of storage batteries to pre-cycle 3 times
- \* Store in a dry and lower temperature environment.
- \* Storage long time no over 30% of the battery.