12.8 V LiFePO4 SERIES

LiFePO4 Battery



12.8 V / 100 Ah



12.8 V / 150 Ah



12.8 V / 200 Ah



12.8 V / 300 Ah

Customer _____ Total Pages 11

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Prepared by	Reviewed by	Approved by

Customer Approval

Dept.	Signature	Date
QA Dept		
R&D Dept		
Approved by		

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1. Revision History

Product Revision History

MODEL	Revision	Date	Mark	Description of Changes	Approved by
12.8V 100Ah	R9	2026-11-16			
12.8V 150Ah	R9	2026-11-16			
12.8V 200Ah	R9	2026-11-16			
12.8V 300Ah	R9	2026-11-16			

2. Scope

This specification describes the basic performance, technical requirements, test methods, warnings and precautions for the LiFePO4 rechargeable battery.

3. Product Shape and Dimensions

MODEL	Dimensions L × W × H
12.8V 100Ah	258 × 167 × 212 mm
12.8V 150Ah	330 × 172 × 215 mm
12.8V 200Ah	370 × 190 × 250 mm
12.8V 300Ah	370 × 190 × 250 mm

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4. Specification

12.8 V / 100 Ah | 12.8 V / 150 Ah

No.	Item	100 Ah	150 Ah	Remarks
1	Rated Capacity	100Ah	150Ah	Standard discharge（0.2 C5）after standard charge（0.2 C5）
2	Minimum Rated Capacity	98Ah	147Ah	Standard discharge（0.2 C5）after standard charge（0.2 C5）
3	Nominal Voltage	12.8V	12.8V	
4	Expected cycle life	Higher than 80% of the Initial Capacity of the Cells	Higher than 80% of the Initial Capacity of the Cells	◆Charge: CC at 0.2C to 14.6V, then CV until the current decreases to 0.05C ◆Rest: 30min ◆Discharge: 0.2C to 10.0V ◆Temperature: 20±5℃ ◆Perform 2000 cycles 100% DOD
5	Discharge cut-off voltage	10V	10V	
6	Charging cut-off voltage	14.6V	14.6V	
7	Cell and assembly method	100Ah	150Ah	4S1P
8	Housing material	Plastic housing	Plastic housing	
9	Standard charge	Charge at 0.2C constant current (CC) to 14.6V, then at 14.6V constant voltage (CV) until the charge current decreases to ≤0.05C.	Charge at 0.2C constant current (CC) to 14.6V, then at 14.6V constant voltage (CV) until the charge current decreases to ≤0.05C.	Charge time: approx. 6h

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Specification continued

12.8 V / 100 Ah | 12.8 V / 150 Ah

No.	Item	100 Ah	150 Ah	Remarks
10	Standard discharge	Constant current: 0.2C Cut-off voltage: 10.0V	Constant current: 0.2C Cut-off voltage: 10.0V	
11	Maximum Charge Current	50A	75A	
12	Maximum Continuous Discharge Current	100A	150A	
13	Peak current	200A	300A	3s
14	Operating Temperature Range	Charge: 0~45℃	Charge: 0~45℃	60±25% R.H. 23 ± 5°C (recommended)
14	Operating Temperature Range	Discharge: -10~60℃（cell surface temperature≤80℃）	Discharge: -10~60℃（cell surface temperature≤80℃）	60±25% R.H. 23 ± 5°C (recommended)
15	Storage Temperature Range	Less than 1 year : 0~25℃	Less than 1 year : 0~25℃	60±25% R.H. In the shipment state 23 ± 5°C (recommended)
15	Storage Temperature Range	Less than 3 months:-10~35℃	Less than 3 months:-10~35℃	60±25% R.H. In the shipment state 23 ± 5°C (recommended)
16	Weight	Approx: 11 kg	Approx: 13.5 kg	
17	Maximum Dimensions	Height:212mm	Height:215mm	
17	Maximum Dimensions	Width: 167mm	Width: 172mm	
17	Maximum Dimensions	Length:258mm	Length:330mm	
18	Communication	Bluetooth	Bluetooth	Customized

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4. Specification

12.8 V / 200 Ah | 12.8 V / 300 Ah

No.	Item	200 Ah	300 Ah	Remarks
1	Rated Capacity	200Ah	300Ah	Standard discharge（0.2 C5）after standard charge（0.2 C5）
2	Minimum Rated Capacity	196Ah	294Ah	Standard discharge（0.2 C5）after standard charge（0.2 C5）
3	Nominal Voltage	12.8V	12.8V	
4	Expected cycle life	Higher than 80% of the Initial Capacity of the Cells	Higher than 80% of the Initial Capacity of the Cells	◆Charge: CC at 0.2C to 14.6V, then CV until the current decreases to 0.05C ◆Rest: 30min ◆Discharge: 0.2C to 10.0V ◆Temperature: 20±5℃ ◆Perform 2000 cycles 100% DOD
5	Discharge cut-off voltage	10V	10V	
6	Charging cut-off voltage	14.6V	14.6V	
7	Cell and assembly method	200Ah	300Ah	4S1P
8	Housing material	Plastic housing	Plastic housing	
9	Standard charge	Charge at 0.2C constant current (CC) to 14.6V, then at 14.6V constant voltage (CV) until the charge current decreases to ≤0.05C.	Charge at 0.2C constant current (CC) to 14.6V, then at 14.6V constant voltage (CV) until the charge current decreases to ≤0.05C.	Charge time: approx. 6h

12.8 V LiFePO4 SERIES

Specification continued

12.8 V / 200 Ah | 12.8 V / 300 Ah

No.	Item	200 Ah	300 Ah	Remarks
10	Standard discharge	Constant current: 0.2C Cut-off voltage: 10.0V	Constant current: 0.2C Cut-off voltage: 10.0V	
11	Maximum Charge Current	100A	150A	
12	Maximum Continuous Discharge Current	100A	200A	
13	Peak current	200A	250A	
14	Operating Temperature Range	Charge: 0~45℃	Charge: 0~45℃	60±25% R.H. 23 ± 5°C (recommended)
14	Operating Temperature Range	Discharge: -10~60℃（cell surface temperature≤80℃）	Discharge: -10~60℃（cell surface temperature≤80℃）	60±25% R.H. 23 ± 5°C (recommended)
15	Storage Temperature Range	Less than 1 year : 0~25℃	Less than 1 year : 0~25℃	60±25% R.H. In the shipment state 23 ± 5°C (recommended)
15	Storage Temperature Range	Less than 3 months:-10~35℃	Less than 3 months:-10~35℃	60±25% R.H. In the shipment state 23 ± 5°C (recommended)
16	Weight	Approx: 18 kg	Approx: 25 kg	
17	Maximum Dimensions	Height:250mm	Height:250mm	
17	Maximum Dimensions	Width: 190mm	Width: 190mm	
17	Maximum Dimensions	Length:370mm	Length:370mm	
18	Communication	Bluetooth	Bluetooth	Customized

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5. Performance and Test Conditions

5.1 Standard Test Conditions

Tests should be conducted with new batteries within one week after shipment. The batteries shall not have undergone more than five cycles before testing. Unless otherwise specified, tests and measurements shall be performed at a temperature of 20±5℃ and a relative humidity of 45~85%. If it is determined that the test results are not affected by these conditions, the tests may be conducted at a temperature of 15~30℃ and a humidity of 25~85%RH.

5.2 Measuring Instruments or Apparatus

5.2.1 Dimensional Measuring Instrument

Dimensions shall be measured using instruments with a precision of 0.01 mm or better.

5.2.2 Voltmeter

The voltmeter shall be of the class specified in the national standard or a more sensitive class, with an internal impedance of at least 10kΩ/V.

5.2.3 Ammeter

The ammeter shall be of the class specified in the national standard or a more sensitive class. The total external resistance, including the ammeter and wires, shall be less than 0.01Ω.

5.2.4 Impedance Meter

Impedance shall be measured by a sinusoidal alternating current method (1kHz LCR meter).

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5. Performance and Test Conditions

5.3 Standard Charge/Discharge

5.3.1 Standard Charge: 0.2C

Charge the battery at a constant current of 0.2C until it reaches 14.6V. Then charge it at a constant voltage of 14.6V while the charge current tapers. Terminate charging when the current has tapered to 0.05 C5A. Charge time: approximately 6h. The battery shall demonstrate no permanent degradation when charged between 0 °C and 45 °C.

5.3.2 Standard Discharge: 0.2C

The battery shall be discharged at a constant current of 0.2C to 10.0V at 20 ± 5°C.

5.3.3 Unless otherwise specified, the rest time between charging and discharging is 30min.

5.3.4 Low-temperature Discharge Performance: After a full standard charge, the cell shall deliver at least 65% of its initial capacity when discharged at 0.2C to 1.5V at -20°C. Low-temperature discharge performance of the battery pack depends on PCM settings.

At -20°C and 0.2C: discharge capacity ≥65% of initial capacity.

5.4 Appearance

The battery shall be free from defects such as cracks, stains, rust or leakage that may adversely affect its commercial value.

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6. Battery Handling

6.1 Prohibition of Short Circuits

Never short-circuit the battery. A short circuit generates a very high current, which heats the battery and may cause electrolyte leakage, toxic gas release or an explosion, all of which are very dangerous.

The battery terminals can easily be short-circuited if placed on a conductive surface.

Such an external short circuit may generate heat and damage the battery.

An appropriate protection circuit with a PCM shall be used to protect the battery pack against accidental short circuits.

6.2 Prohibition of Series and Parallel Connections

The battery module shall only be used on its own and shall not be connected in series or in parallel.

6.3 Mechanical Shock

Dropping, impacts, bending, etc. may degrade battery performance.

7. Other Matters

Prevention of Internal Short Circuits within the Battery Pack

Sufficient insulating layers shall be provided between the wiring and the cells for additional safety protection.

The battery pack shall be designed to prevent internal short circuits, which may cause smoke or fire.

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8. Storing the Batteries

The batteries should be stored at room temperature, charged to about 30% to 50% of their capacity.
During long-term storage, it is recommended that the batteries be charged about once every three months to prevent over-discharge.

9. Other Chemical Reactions

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 charging, discharging and ambient temperature 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 be charged for a prolonged period even when the correct charging method is used, they need to be replaced.

10. Note

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