

# Lithium Iron Phosphate Battery

## Specification



**Model No: ESS48-100(48V100AH)**

<b>Designed</b>	<b>Checked</b>	<b>Approved</b>
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# ESS48-100(48V100Ah) LiFePO4 Battery Specification

DOC NO. :LY2110017

REV :       A2.0      

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**1. Preface**

This specification describes the type and size, performance, technical characteristics, warning and caution of the ESS48-100(48V100Ah) rechargeable LiFePO4 Battery pack. The specification only applies to ESS48-75(48V75Ah)rechargeable LiFePO4 Battery pack supplied by Leadyo Technology Co.,Ltd.

**2. Product and Model**

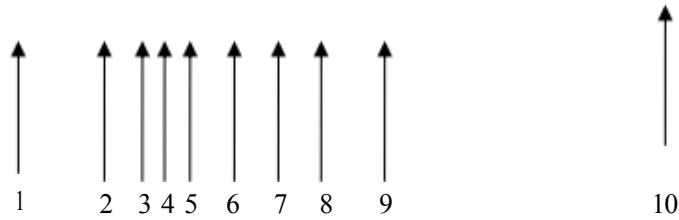
2.1 Product: ESS48-100(48V100Ah) LiFePO4 Battery Pack

2.2 System Configuration:

Standard pack:LFP-48V 4.8KW



LiFePO4 Battery Pack



Number	Name	Description	
1	+	P+/C+	
2	LED	SOC	
3	CAN	2.0	
4	ALARM/RUN	State	
5	DIAL	Site	
6	RS485		
7	RS485		
8	RS232		
9	RESET		
10	-	P-/C-	

**3. Battery Pack Specifications**

Items	Standard	Comments
Nominal voltage	48V	15S
Typical capacity	100±0.5Ah	At 0.5C discharge rate
Max continuous discharge current	100A	
Discharge cut-off voltage	About 37.5V	



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Charge input voltage	54±0.05V	Charge mode: CC/CV, Use a constant current, constant voltage(CC/CV)
Charge current	≤50A	
Operation temperature range	Charge/ Discharge	0°C ~ +45°C/-20°C ~ +60°C
	Discharge	When the environment temperature is higher than 45°C, please pay attention to ventilation and heat rejection.
Storage temperature range	0°C ~ 40°C ( Capacity 80% )	Recommended long-term storage temperature is 15~25°C
Humidity	5%≤RH≤85%	
Cabinet Material	Iron	
Total Weight	55±0.5kg	
Size ( L*W*H )	L(435±2mm)*W(420±2mm)*H(222±2mm)	
Protection function	Over charge protection、Over discharge protection、Over current protection、Short circuit protection, Temperature Protection	
Communication port	CANBUS/RS232 / RS485	

#### 4. Standard Test Conditions

All test in this specification should be in standard atmospheric conditions: temperature:

25± 5°C, relative humidity: 65±20%.



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### 5. Characteristics

#### 5.1 Standard charge

Charge the battery with the Battery special test cabinet, supply 54V voltage, constant-current 0.2C(A) current until current down to 0.02C (A) .

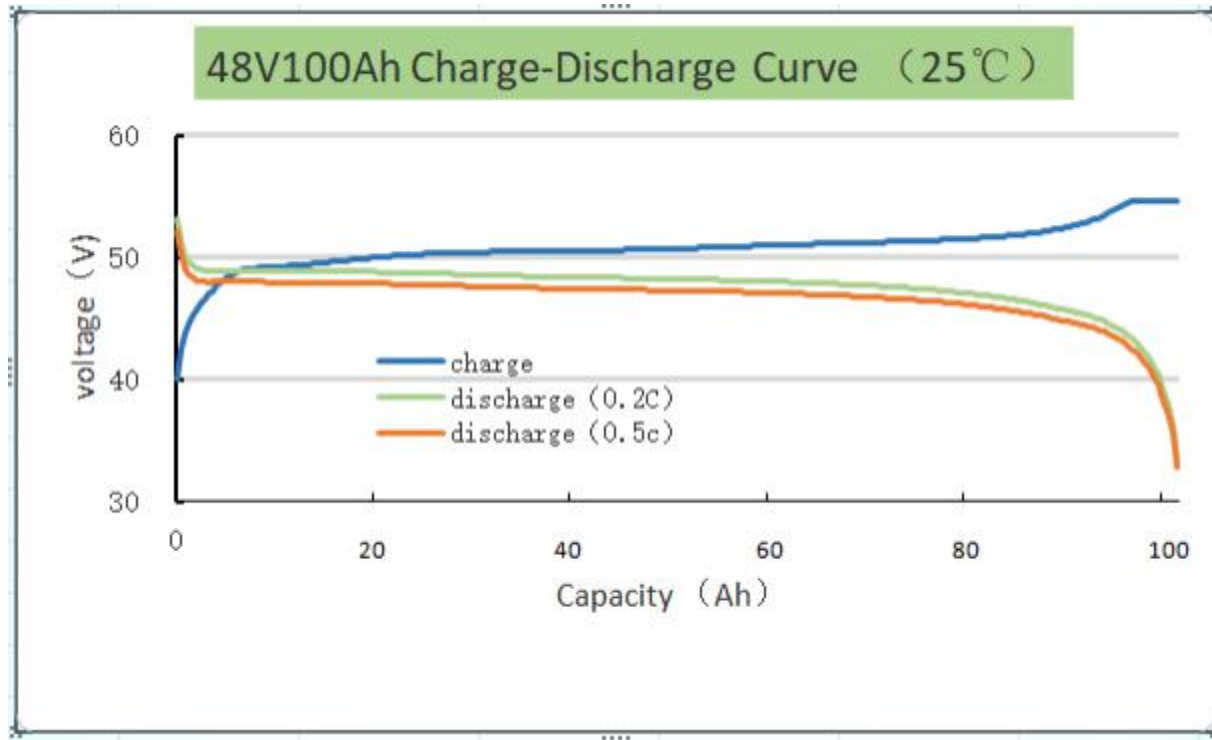
#### 5.2 Standard discharge

Discharge the battery at 0.2C (A) to 37.5V or battery cut off voltage.

#### 5.3 Electrical Performance

Test Items	Test Methods	Test Standards
Capacity retention rate	After standard charge under 5.1 specified conditions, store the cells for 28 days, then discharge at 0.2C (A ) to cut-off voltage.	Capacity retention rate≥80%
Cycle Life	1) Standard charge at 0.2C (A) , 2) Rest 0.5~1 h 3) Discharge at 0.2C to cut off voltage 4) Capacity retention rate≥80%	>4000cycles @ 100% DOD; >6000cycles @80% DOD; >10000cycles @ 80% DOD;

**6.Characteristics Curve**



**7. Cautions**

7.1 Charging current should not be more than maximum charge current specified in the Product Specification, Charging current bigger than recommended current may damage the battery;

7.2 Discharging current should be no more than maximum discharge current specified in the Product Specification; Discharging current bigger than recommended discharge current may damage the battery;

7.3 It should be noted that the cell would be possible to be at a over-discharged state by its self-discharge characteristics in case the cell is not used for long time. In order to prevent over-discharging, the cell shall be charged periodically to maintain between 49.5 V and 51V ( Recommended 3 months one cycle ) .Over-discharging may causes loss of cell performance, characteristics, or battery functions;

7.4 Please charge the battery within 12 hours after use;

7.5 Battery storage environment follow the above conditions and in standard atmosphere, should be without strong magnet, no power, no static;



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- 7.6 Do not reverse the polarity of the battery pack for any reason;
- 7.7 Do not short circuit the battery pack;
- 7.8 Do not reverse polarity charging;
- 7.9 Battery packs can be combined in series or in parallel according to the specification;
- 7.10 Do not immerse the battery pack in water or sea water, or get it wet;
- 7.11 Do not disassemble battery;
- 7.12 Do not expose the battery to extreme heat or flame;
- 7.13 Please use a compatible charger for charging;