

Lithium Iron Phosphate Battery Specification



Model No: ESS48-50(48V50AH)

Designed	Checked	Approved
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ESS48-50(48V50Ah) LiFePO4 Battery Specification

DOC NO. :LY2101017

REV : A2.0

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DATE: 2021-10-17

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1. Preface

This specification describes the type and size, performance, technical characteristics, warning and caution of the ESS48-50(48V50Ah) rechargeable LiFePO4 Battery pack. The specification only applies to ESS48-50(48V50Ah)rechargeable LiFePO4 Battery pack supplied by Leadyo Technology Co.,Ltd.

2. Product and Model

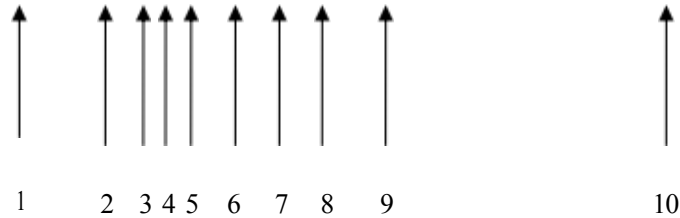
2.1 Product: ESS48-50(48V50Ah) LiFePO4 Battery Pack

2.2 System Configuration:

Standard pack:LFP-48V 2.4KW



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	50±0.5Ah	At 0.5C discharge rate
Max continuous discharge current	50A	
Discharge cut-off voltage	About 37.5V	
Charge input voltage	54±0.05V	Charge mode: CC/CV, Use a constant current, constant voltage(CC/CV)
Charge current	≤2A	
Operation temperature	Charge/ Discharge	0°C ~ +45°C/-20°C ~ +60°C



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range	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	19.8±0.5kg	
Size (L*W*H)	L(435±2mm)*W(418±2mm)*H(133±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%.

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) .

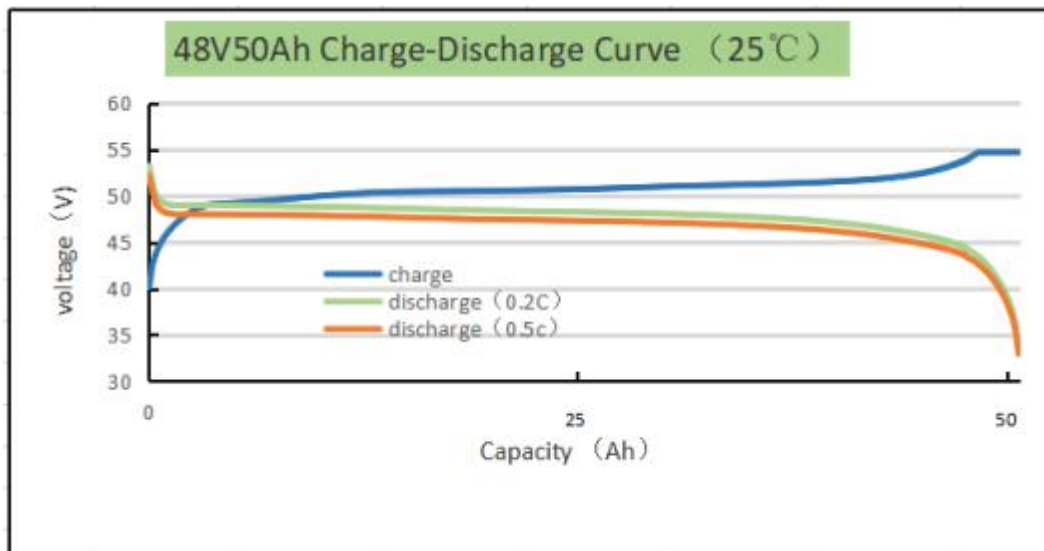
5.2 Standard discharge

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;

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;