

LiFePO4 Battery Pack

Specification

Model No: HDA51.2-314(51.2V314Ah)

Designed	Checked	Approved

CONTENT

1. Preface.....	3
2. Product and Model.....	3
3. Battery Pack Specifications.....	4
4. Standard Test Conditions.....	5
5. Characteristics.....	5
6. Characteristics Curve.....	5
7 BMS Specification.....	6
8 Cautions.....	7
9 Version History.....	8

HDA51.2-314(51.2V314Ah) LiFePO4 Battery Pack Specification

DOC NO. HD/PK26-H006

REV : A2.1

PAGE: 3 of 8

DATE: 2026-02-23

1. Preface

This specification describes the type and size, performance, technical characteristics, warning and caution of the HDA51.2-314(51.2V314Ah) LiFePO4 rechargeable battery pack. The specification only applies to HD51.2-314(51.2V314Ah) LiFePO4 rechargeable battery pack supplied by Haidi Energy Technology Co.,Ltd.

2. Product and Model

2.1 Product: HD51.2-314(51.2V314Ah) LiFePO4 Battery Pack

2.2 System Configuration:

Standard pack:314Ah-3.2V-16S1P



Charge/Discharge	M8 Terminal
Communication	CAN/RS485

	HDA51.2-314(51.2V314Ah) LiFePO4 Battery Pack Specification	DOC NO. <u>HD/PK26-H006</u> REV : <u> </u> A2.1 PAGE: <u> 4 </u> of <u> 8 </u> DATE: <u> 2026-02-23 </u>
--	---	--

3. Battery Pack Specifications

Items	Standard	Comments
Nominal voltage	51.2V	
Typical capacity	314Ah	At 0.2C discharge rate
Minimum capacity	306Ah	
Max continuous discharge current	200A	
Discharge cut-off voltage	About 40V	
Charge input voltage	58.4±0.05V	Charge mode: CC/CV, Use a constant current, constant voltage(CC/CV)
Charge current	≤200A	
Internal resistance	≤15mΩ	AC Impedance, 1KHz
Operation temperature range	Charge/Discharge	Recommended:0°C~+45°C/-20°C~+60°C
		Limit:0°C~+60°C/-20°C~+65°C 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	Metal Case	
Total Weight	130±10kg	
Size (L*W*H)	650*300*921mm±3mm	
Protection function	Over charge protection、Over discharge protection、Over current protection、Short circuit protection, Temperature protection.	
Communication	CAN/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 constant voltage as 58.4V, constant-current 0.2C(A) current until current down to 0.02C (A) .

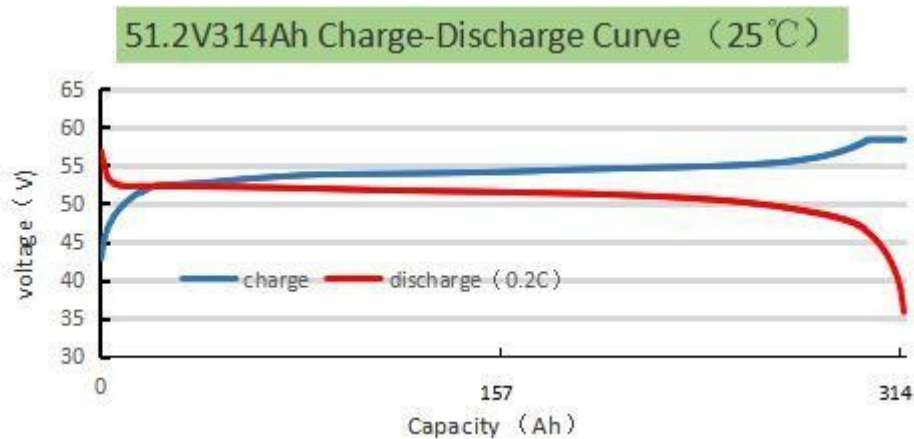
5.2 Standard discharge

Discharge the battery at 0.2C (A) to 40V or battery cut-off.

5.3 Electrical Performance

Test Items	Test Methods	Test Standards
Capacityretention 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 0.5~1h 3) Discharge at 0.2C to cut-off voltage 4) Capacity retention rate≥80%	>2000cycles @ 100% DOD; >3000cycles @ 90% DOD; >4000cycles @ 80% DOD;

6. Characteristics Curve



HDA51.2-314(51.2V314Ah) **LiFePO4 Battery Pack Specification**

DOC NO. HD/PK26-H006

REV : A2.1

PAGE: 6 of 8

DATE: 2026-02-23

7. BMS Specification

Item		Parameter			Remark
Charging Voltage		58.4V			
Charging Model		CC-CV			
Maximum Charging Current		200A			
Continuous Discharge Current		200A			
The following is the core protection function for cell:					
		Minimum Value	Typical Value	Maximum	
Over charge detection voltage		3.60	3.65	3.70	V
Overcharge release voltage		3.35	3.40	3.45	V
Over discharge detection voltage		2.60	2.70	2.80	V
Over discharge release voltage		2.8	2.90	3.0	V
Over discharge current value		200	210	220	A
Overcharge detection delay time		500	1000	1500	mS
Delay time of over voltage detection		500	1000	1500	mS
Over current detection delay time		500	1000	1500	mS
Balance Voltage		3.35	3.40	3.45	V
Balance Current		30	50	70	mA
Self-Consumption			400		uA
Temperature Protection		Temperature Protection			
		Typical Value	Tolerance Value	Delay	Remark
Protect the Temperature	Charging	65	± 5		℃
Recovery Temperature		55	± 5		℃
Low Temperature Protection		0	± 5		℃
Cryogenic Release		5	±5		℃

	HDA51.2-314(51.2V314Ah) LiFePO4 Battery Pack Specification					DOC NO. <u>HD/PK26-H006</u> REV : <u> </u> A2.1 PAGE: <u> 7 </u> of <u> 8 </u> DATE: <u> 2026-02-23 </u>
--	---	--	--	--	--	--

Protect the Temperature	Discharge	70	±5		°C
Recovery Temperature		60	±5		°C
Low Temperature Protection		-20	±5		°C
Cryogenic Release		-15	±5		°C

8. Cautions

- 8.1 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;
- 8.2 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;
- 8.3 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 13.2V and 13.6V (Recommended 3 months one cycle) .Over-discharging may causes loss of cell performance, characteristics, or battery functions;
- 8.4 Please charge the battery within 12 hours after use;
- 8.5 Battery storage environment follow the above conditions and in standard atmosphere, should be without strong magnet, no power, no static;
- 8.6 Do not reverse the polarity of the battery pack for any reason;
- 8.7 Do not short circuit the battery pack;
- 8.8 Do not reverse polarity charging;
- 8.9 Battery packs can be combined in series or in parallel according to the specification;
- 8.10 Do not immerse the battery pack in water or sea water, or get it wet;
- 8.11 Do not disassemble battery;
- 8.12 Do not expose the battery to extreme heat or flame;
- 8.13 Please use a compatible charger for charging;