



50.4V50Ah Lithium-ion Battery Specification

DOC NO. : HD/PK-Z20008

REV : A2.0

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DATE: 2021-01-29

Lithium-ion Battery Pack Specification

Model No: HD50.4-50(50.4V50Ah)

Designed	Checked	Approved
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1. Preface

This specification describes the type and size, performance, technical characteristics, warning and caution of the HD50.4-50(50.4V50Ah) rechargeable battery pack. The specification only applies to 50.4V100Ah battery pack supplied by Haidi.

2. Product and Model

2.1 Product: HD50.4-50(50.4V50Ah) Lithium-ion Battery Pack

2.2 System Configuration

Standard Pack:





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3. Battery Pack Specification

Items	Standard	Comments
Nominal voltage	50.4V	14S
Typical capacity	50 ± 2 Ah	At 0.2C discharge rate
Max continuous discharge current	150A	
Discharge cut-off voltage	About 42V	
Charge input voltage	58.8V	Charge mode: CC/CV, Use a constant current, constant voltage(CC/CV)
Charge current	≤50A	
Operation temperature range	Charge/ Discharge	0°C~+55°C/-40°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~50°C (Capacity 80%)	Recommended long-term storage temperature is 15~25°C
Humidity	5%≤RH≤85%	
Housing Material	Stainless Steel	
Total Weight	22±2kg	
Size (L*W*H)	(273*158*350)±2mm	
Protection function	Over charge protection、Over discharge protection、Over current protection、Short circuit protection	
Protection Grade	IP65	
SoC	LED Display	



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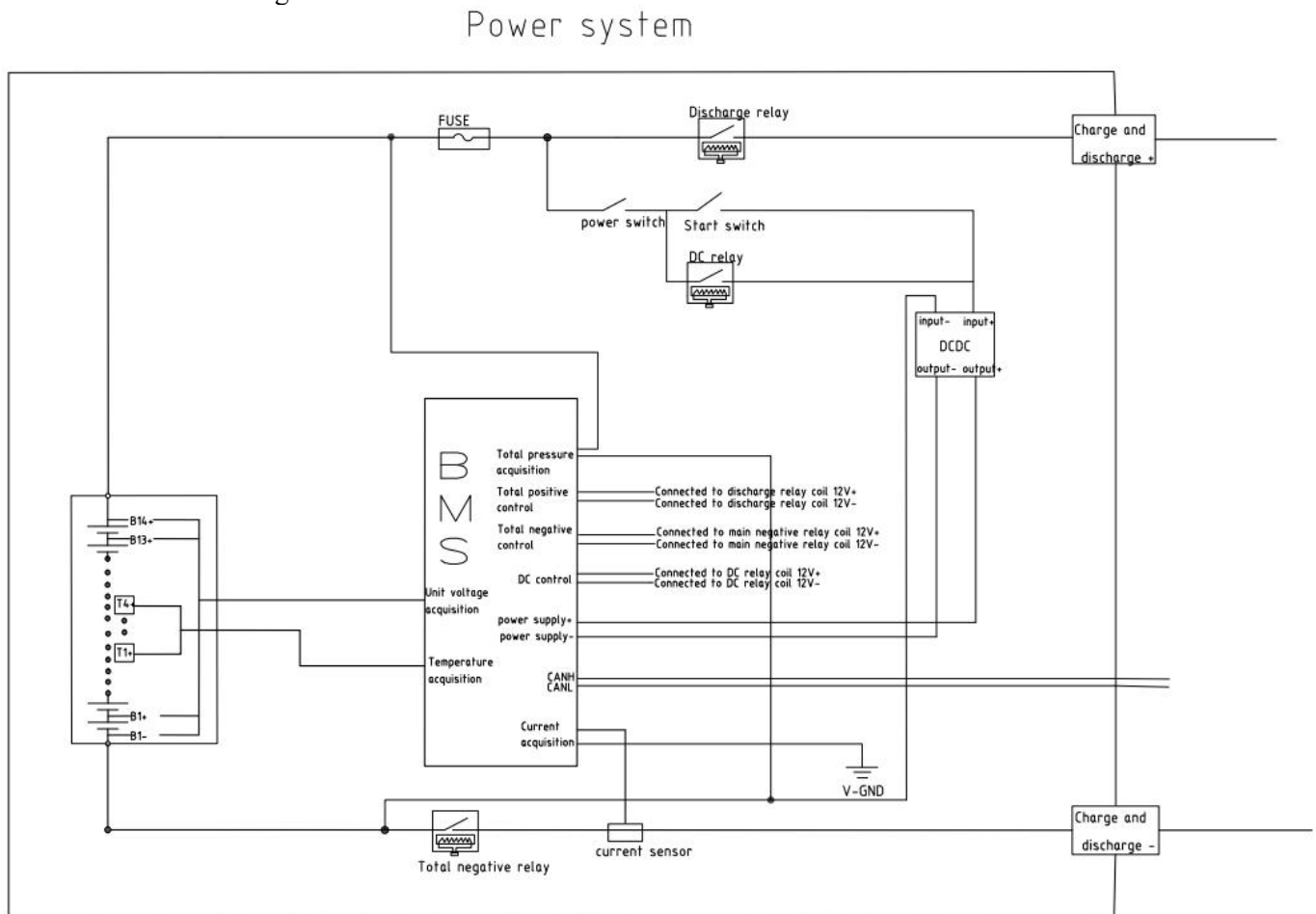
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4. Electrical schematic diagram



5. Standard Test Conditions

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

$25 \pm 5^\circ\text{C}$, relative humidity: $65 \pm 20\%$.

6. Characteristics

6.1 Standard charge

Charge the battery with the Battery special test cabinet, supply 58.8V voltage, constant-current 0.2C(A) current until current down to 0.02C (A) .

6.2 Standard discharge

Discharge the battery at 0.2C (A) to 42V or battery cut off voltage.

6.3 Electrical Performance



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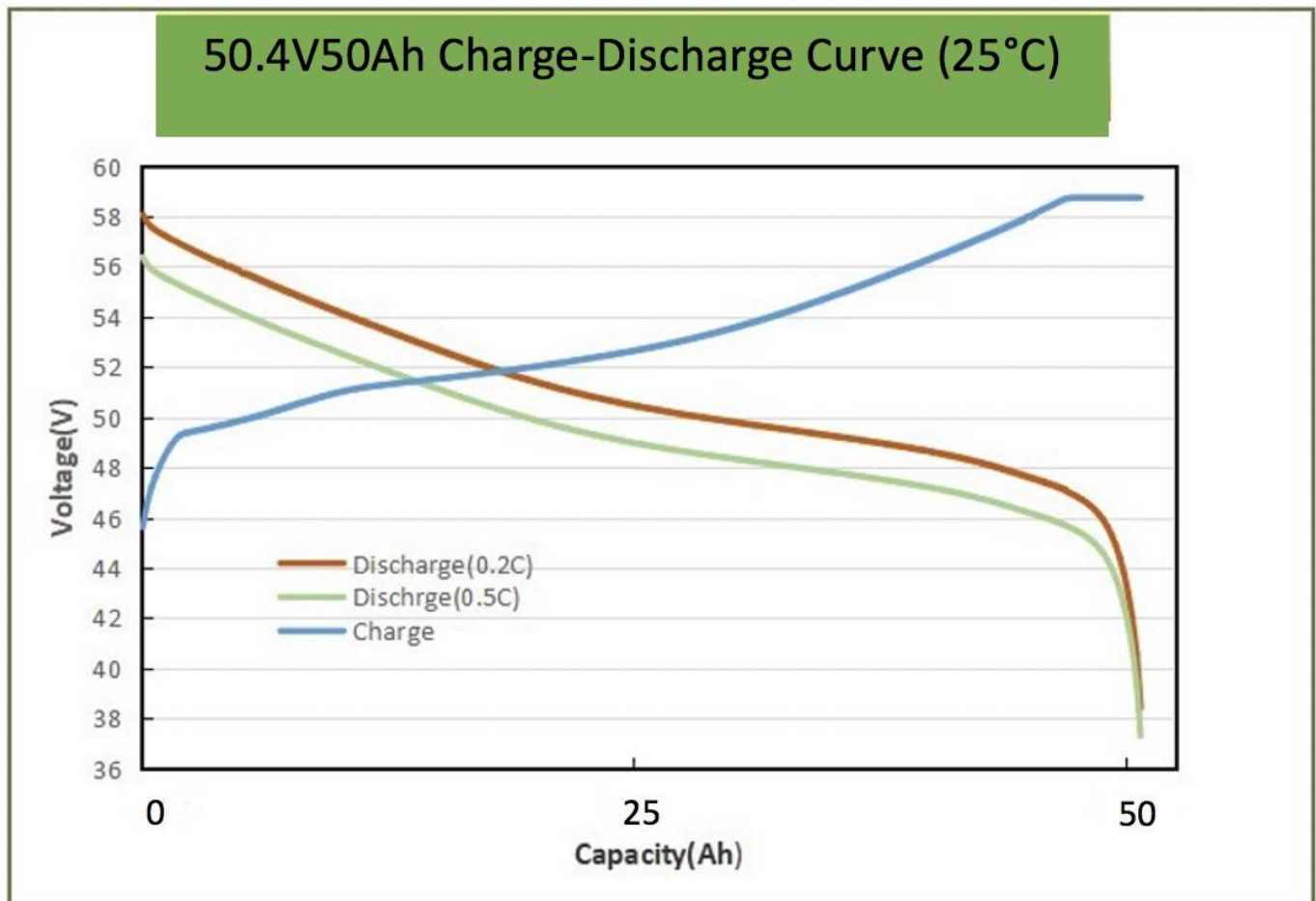
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Test Items	Test Methods	Test Standards
Capacity retention rate	After standard charge under 5.1 specified conditions, store the cells for 28 days, then discharge at 0.2C (A) to cut-off voltage.	Capacity retention rate $\geq 80\%$
Cycle Life	1) Standard charge at 0.2C (A) , 2) Rest 0.5~1 h 3) Discharge at 0.2C to cut off voltage 4) Capacity retention rate $\geq 80\%$	>500cycles @ 100% DOD; >1000cycles @ 90% DOD; >1200cycles @ 80% DOD;

7.Characteristics Curve



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;



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- 8.1 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 53.2V and 56V (Recommended 3 months one cycle) .Over-discharging may causes loss of cell performance, characteristics, or battery functions;
- 8.2 Please charge the battery within 12 hours after use;
- 8.3 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;