Jiangsu Midea Cleaning Electrical Appliances Co., Ltd.

Document Number:PACK24P_MC_25.9v_Lithium

Version Number:A0

Document Title:BP25925DBattery Pack Specification Sheet

Product Name	PACK 24P_MC_25.9v_Lithium	Customer Name	
Product Code		Submission Date	

This specification sheet consists of the following sections:

Serial Number	Name	Prepared by	Remarks
1	Revision History	Sun Yumin	
2	Overview	Sun Yumin	
3	Scope of Application	Sun Yumin	
4	Main Functions/Parameters	Sun Yumin	
5	Safety requirements	Song Dongjing	
Additional notes			

Preparation	Sun Yumin	Date	
Review	Song Dongjing	Date	
Co-signing	Huang Wenjin	Date	
Approval	Wan Dekang	Date	

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Part One Revision History

Serial Number	Content of modifications	Reviser	Version	Revision Date
1	Initial Version	Sun Yumin	A0	2024.07.016
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Section Two Overview

This specification sheet is used to standardize the functionality, performance, electrical, and inspection requirements of the battery pack for the Vacuum Division of the Cleaning Appliances Department. The product model applicable is PACK 24P_MC_25.9v_Lithium . Its specific role is as follows:

1. Basis for product design and material selection;
2. Basis for suppliers to produce and inspect the product;
3. Basis for quality departments to inspect and return goods.

Section Three Scope of Application

Serial Number	Usage Conditions	Parameters	Remarks
1	Storage Environment Temperature	-20℃～+45℃	Refer to cell specification sheet
2	Charge temperature	0℃～+55℃	
3	Operating temperature	-20℃～+75℃	
4	Maximum continuous discharge current	20A	
5	Maximum continuous charge current	2.5A	
6	Maximum input voltage	29.4V	Single cell 4.2V
7	Battery pack type	Lithium7S1P	Nominal voltage is25.9V
8	Rated voltage	25.9V	SunPower INR18650-2500

Section Four Main Functions/Parameters

Battery pack section:

Serial Number	Function	Parameters	Remarks
1	Rated capacity	≥2450mAh	2A constant current charge to 4.18V/Cell, then constant voltage charge until 200mA , 0.5A constant current discharge to 2.6V/Cell, discharge capacity ≥ 2500mAh
2	Rated voltage	25.9V	Factory voltage 25.2 V~25.5V
3	3 month storage voltage	≥24.9V	Long-term storage recheck criteria: voltage higher than 24.9V can be kept in storage voltage 24.9 ＞ V ≥ 24.5 refill charge, below 24.5V deemed不合格 (non-conforming)
4	Charging Current	0.5±0.1 A	
5	Initial Internal Resistance	≤161mΩ	Cell Internal Resistance 18*7, Welding and Connection Strip Impedance 5*7
6	Pack Matching Requirements	Voltage Difference Does Not Exceed6mV; Internal Resistance Difference Does Not Exceed2mΩ; Capacity Difference Does Not Exceed20mAh; Limited to Cells from the Same Batch	Voltage and Internal Resistance Fully Inspected for Matching, Considering the Impact of Test Contact Resistance, Internal Control Determination by 2.5 mΩ
7	Storage Temperature	-20~45℃	Refer to cell specification sheet
8	Interface Definition	P+ : Discharge Positive Terminal	Ground Brush andBLDCPositive Terminal,PIN1-PIN4
		C + : Charging Positive Terminal	Charging Positive Terminal,PIN5
		WKUP : Wake-up signal	Battery pack wake-up signal,PIN7
		S : Communication signal	Communication signal,PIN10
		B - : Charge/discharge negative	Charge/discharge negative,PIN11-PIN14
9	Cycle life	300T 70%	2A constant current charging to 4.18V/cell , then constant current charging to 250mA , 15A constant current discharging to 2.6V/cell , cycle 300T after capacity ≥70% initial capacity

10	Low temperature-10℃discharge capacity	≥80% rated capacity	Charged to full at normal temperature, low temperature-10℃ discharge the battery pack to capacity≥80%rated capacity
11	High temperature 60℃discharge capacity	≥95% rated capacity	Charged at normal temperature, 60℃discharging the battery pack≥95%rated capacity
12	Recharge voltage requirement	25.2 V~25.5V	Inspection voltage after charging upon long-term storage

Protection function section:

Serial Number	Function	Parameters	Remarks
1	Fuse specifications	25A	Slow-blow fuse, connected in series with the battery pack P+pole
2	Primary single cell overcharge protection	4.225V±0.025V	During charging, when the PCM detects that the voltage of any cell in the battery pack reaches 4.225V and persists for 1±0.5S , the charging MOS is shut off.
3	Primary single cell overcharge delay	1±0.5S	
4	Secondary single cell overcharge protection	4.27V±0.025V	During charging, the PCM detects that the voltage of any single cell in the battery pack reaches 4.27V and lasts for 1±0.5S, the communication shuts down the adapter output.
5	Secondary single cell overcharge delay	1±0.5S	
6	Overcharge protection recovery voltage	4.1V±0.025V	After single cell overcharge protection, when all cell voltages are below 4.1V± 0.025V, the overcharge protection is released.
7	Primary single cell under-voltage protection	2.6V±0.1V	During discharge, the PCM detects that the voltage of any single cell in the battery pack is below 2.6V and lasts for 1±0.5S, the discharge is stopped.
8	Primary single cell under-voltage delay	1±0.5S	
9	Secondary single cell under-voltage protection	2.5V±0.1V	During discharge, the PCM detects that the voltage of any cell in the battery pack is below 2.5V and this condition persists for 5±0.5S, the system enters shutdown mode.
10	Secondary single cell under-voltage delay	5±0.5S	
12	Under-voltage protection recovery voltage	3.0V±0.1V	After single cell under-voltage protection, when all cell voltages are higher than 3.0V±0.1V, the under-voltage protection is released.
13	Under-voltage lockout	1.1 V±0.1V	The PCM detects that the voltage of any cell in the battery pack is below 1.1V for 5 seconds, charging is prohibited.
14	High temperature discharge protection	75℃±3℃	During discharge, if the battery surface temperature reaches 75℃±3℃, external discharge stops until the temperature drops below 70℃, then discharge resumes
15	Low Temperature Discharge Protection	-17℃±3℃	During discharge, if the battery surface temperature reaches - 17℃±3℃ , stop discharging until the temperature recovers to - 12℃ or above, then resume discharge
16	High Temperature Charge Protection	55℃±2℃	During charging, if the battery surface temperature reaches 55℃±2℃ , stop charging until the temperature decreases to 50℃ or below, then resume charging
17	Low Temperature Charge Protection	2℃±2℃	During charging, if the battery surface temperature reaches 2℃±2℃ , stop charging until the temperature recovers to 5℃ or above, then resume charging
18	Overcurrent protection during charging	2.5A±0.3A	During charging, if the charging current is detected to be greater than 2.5A and lasts for 1S , charging will be stopped. After the charger is unplugged, the protection will be lifted.
19	Full charge determination	4.18V	If the battery voltage is detected to be greater than 4.18V for more than 20s or the battery voltage is greater than 4.12V and the charging current is less than 250mA, charging is considered complete and will stop.
20	Battery imbalance protection	1V±0.1V	When the voltage difference between individual cells in the battery pack is detected to be greater than 1V , charging and discharging of the battery pack will be prohibited.
21	Static power consumption	10uA	Shutdown state
22	ESD protection	Contact discharge±8KV, air discharge±15KV	GB/T 17626.2-2006 IEC 61000-4-2:2001

Chapter Section 5 Safety requirements

1Welding must be firm and reliable, with no missed, weak, or bridge welding.

2, the PCB should be coated with a triple-protection lacquer or silicone gel.

3, environmental requirements: all components must meetROHS 2.0requirements.

4. PCB substrate must use materials that comply with ULstandards.