

Batterypack – 142wh
ATP BATTERYPACK**Preface**

The present product is a backup/emergency power supply for UPS designed specially for the power systems of DC low voltage of 24V.

The present product uses the lithium battery pack of high energy density to store energy. At the time with power, the charging management chip charges the lithium battery in a course of trickle/constant current/constant voltage. When the charging voltage reaches the set value, it enters into a sleeping state with very low power consumption automatically. (Until the voltage of battery reduces to the set value due to self-consuming, it will work again.) The battery will be protected as much as possible because of no floating charge. When the power is off or the power supply is unstable, the lithium battery pack will supply power of the required voltage to DC-DC buck-boost circuit. The time of follow current is long. The operation is stable and reliable.

Using sensitive inspection circuit and reliable switching circuit, the present product detects the electric supply in real time. When there is electric supply, the power to the load is supplied completely by the adapter. When there is no power, the power supply to the load will be switched to the lithium battery pack buck-boost circuit. The switching speed is very rapid, almost no time is needed. The switch between electric supply and no electric supply is seamless.

The present product uses a safe and reliable protective circuit to protect well the abnormal situations of over-current, over-voltage and short-circuit during charging and discharging.

This product requires a built-in lithium battery to charge, which will consume the current of the adapter (24V) 1.4A, so the rated current of the adapter is 1.4A larger than the load current.

GENERAL AND ELECTRICAL REQUIREMENTS (Adapters Input: 24V/5A, OUT : 24V/3A Ta=25°C)

Parameter	Test conditions	Min	Typ	Max	Comments
Input voltage(V)		22V	24V	26.4V	22V
Input current(A) @Vbat=22.2V	With external load 3A		5A	6.5A	
	Without external load(Only charging)		1.35A	1.5A	
Output voltage(V)	Main power on	23V	23.5V	24V	DC port output
	Main power off	23.5V	24.5V	25V	DC port output
Output current(A)	Main power on		3A	5A	DC port output
	Main power off		3A	5A	DC port output
Duration time of follow current after power-off (minute)		~41 minutes @5a PB6201-1-22 ~63 minutes @5a PB6201-1-34			
Maximum output power (W)		100W			
Response time of follow current after power-off		<6mS			
Standby current with no DC plug (uA)		100uA			
Full charge time: (Hours)		3-4Hours PB6201-1-22 4-5Hours PB6201-1-34			

All discharge output ports use the same parameter.

Name	Value	Unit	Tolerance	Remarks
Quiescent Power Consumption @sleep mode	200	uA	Max.	

PCM Electrical Characteristics (Ta=25°C)			
No	Item	Condition	Specification
1	Voltage	Charge voltage	25.2V
2	Overcharge	Detection voltage	4.250V±0.05V
3		Release voltage	4.150V±0.1V
4		Detection delay time	680ms±200mS
5	Cell-balance	Cell-balance Detection Voltage	/
6		Single-cell balance current	/
7	Over discharge	Detection voltage	3.000V±0.1V
8		Release voltage	3.200V±0.1V
9		Detection delay time	680ms±200mS
10	Over current	Over current	16A±3A
11		delay time	350ms±100mS
12		Over current	33A±5A
13		delay time	680ms±200mS
14		Short detection delay time	Max 3ms
15	Normal current consumption	Normal current consumption of PCM	Max 50uA
16	Suggest working conditions	max continuous charge/discharge current	放电: 10A
17	IR resistance	PCM内阻/ IR of PCM	≤30mΩ
18	NTC	20~30°C)	/
19	PTC	20~30°C)	/

Battery Pack Specifications

Items	Standard	Comments
Nominal voltage(V)	22.2V	6S2P
Typical Capacity(Ah)	6.4Ah (142.08Wh) PB6200	At 0.2C discharge rate
Operation temperature range °C	Charge:	0°C~+50°C
	Discharge:	-20°C~+60°C
Storage temperature range °C	-25°C~50°C at half charged state	Recommended long-term storage temperature is 0~25°C
Storage environment humidity	RH: 65±20%	
Environment humidity	≤85%RH	

Standard Test Conditions

Environmental Conditions

Unless otherwise specified, all tests stated in this specification are conducted at temperature 25±2°C and humidity 65±20%, air pressure 86kPa~106kPa .

Measuring Equipment

Voltage is measured by D.C. voltmeter which precision is higher than 0.5 grade and self resistance is higher than 1kΩ/V;

Current is measured by D.C. meter which precision is higher than 0.5 grade;

Temperature is measured by thermometer which has proper measuring range and division value is lower than 0.5°C ;

The timer used in measuring should be degreed in hour, minute and second, and should have degree of accuracy no more than ±1%.

Test conditions

The cells to be tested should be new cells and within one month after shipment from our factory and the cells shall not be cycled over five times before the testing. All the tests in this specification shall be conducted in an ambient temperature of 25°C ±2°C under a humidity of 65±20%, unless otherwise specified .

Standard charge

Charge the battery with DC stabilized power supply 25.2V, constant-current 0.2C(A) current until current reach to 0.02C (A) .

standard discharge

Discharge the battery at 0.2C to 18V or the protection circuit come to protection, stop.

Battery Electrical Performance

Test Items	Test Methods	Test Standards
0.2C Discharging Performance	After standard charge, store the battery for 0.5~1hr under 9.1 specified conditions, then discharge at 0.2C(A) to cut-off voltage.	≥100% Nominal capacity
High Temperature Performance	After standard charge, put the cells into 55°C±2°C high temperature box with constant temperature for 2hrs, then discharging at 0.2C(A) to cut-off voltage. Then take the cell out, stored for 2hrs under 10.1 specified conditions, check the exterior appearance.	≥95% Nominal capacity The battery no explosion, no fire
Charge Retention	After standard charge, store the cells for 28 days under 8.1 specified conditions, then discharge at 0.2C to cut-off voltage	capacity retention rate ≥95% of minimum capacity
Cycle Life	1) standard charge at 0.2C(A), 2) rest 0.5~1 hr 3) discharge at 0.2C(A) to cut off voltage 4) rest 0.5~1hr repeat the above steps until 300 cycles.	Capacity retention rate ≥80%

Cautions

Charging current should be less than maximum charge current specified in the Product Specification. Charging with higher current than recommended value may cause damage to cell electrical, mechanical and safety performance and could lead to heat generation or leakage.

The cell shall be discharged at less than the maximum discharge current specified in the Product Specification. High discharging current may reduce the discharging capacity significantly or cause over-heat.

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 22V and 24V. Over-discharging may causes loss of cell performance, characteristics, or battery functions.

The storage temperature and humidity of the battery are as below: -10°C~40°C within one month 0°C~35°C within 2 months 15°C~25°C for 3 months and above 3 months Humidity: 65±20%RH (65±20%RH) .

Prohibition of disassembly.

Do not expose the battery to extreme heat or flame.

Do not reverse the polarity of the battery pack for any reason.

Do not immerse the battery pack in water or sea water, or get it wet.

Use a constant current, constant voltage (CC/CV) lithium-ion (Li+) battery charge controller.