

# Specification Approval Sheet

**Model : ICR18650-26-4S-PTLC**

**Type : Li-ion battery**


**Specification : 14.4V/2600mAh**

## signed by client

<b>signed by client</b>	
<b>Confirmed</b>	
<b>Checked</b>	
<b>Approved</b>	


## signed by manufacturer

<b>signed by manufacturer</b>	
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	<b>Akku Tronics New Energy Technology Co., Limited</b> TEL:0086-755-85290393    FAX:0086-755-86578846	Type: ICR18650-26-4S-PTLC
		REV: 1.0
		Date: 2021-10-13

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## 1. Battery type and scope

This Specification Approval Sheet is for rechargeable Li-ion battery provided by Akku Tronics New Energy Tech. Co., Ltd.

## 2. Basic characteristic and components of the battery

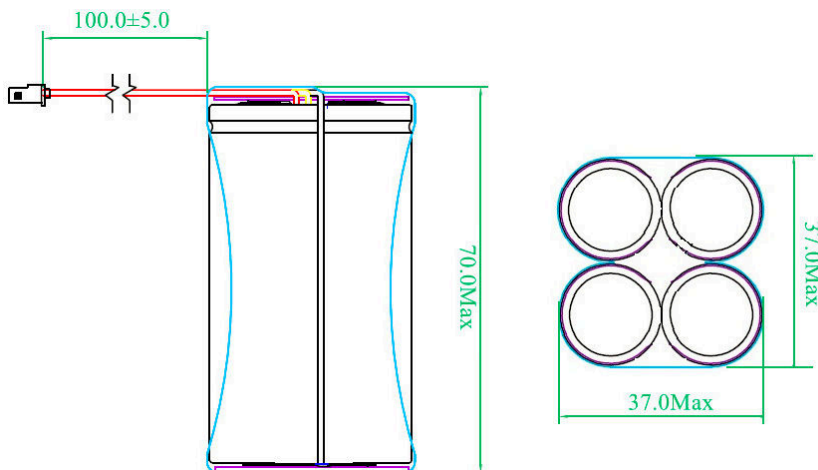
### 2.1 Basic performance parameter of the battery

S/N	Details	Parameters		Remarks
1	Rated voltage	14.4V		
2	Rated capacity	2600mAh		discharge with 0.2C to 11V After fully charge within 1h, measuring the discharge time.
	Minimal capacity	2550mAh		
3	Charge	Limited voltage	16.80V	
		Mode	C.C/C.V.	
		Recommended current	1300mA	0.5C
		Max. current	2600mA	1C
4	Discharge	Limited voltage	11V	2.75V per cell
		Standard current	520mA	0.2C
		Fast Discharge current	2600mA	1C
		Max discharge current	7800mA	3C
5	Working temperature	Charging	0~45°C	
		Discharging	-20~60°C	
6	Storage temperature	1 Month	-20~35°C	Charge to 40%~50% of capacity when storage
		6 months	-20~30°C	
7	Storage humidity	45% ~ 75%	Relative humidity	
8	Weight	Approx. 185g		
9	Pack Initial Internal Impedance	≤240mΩ		
10	Max. dimension	T 37mm x W 37mm x H 70.0mm		
11	Cycle life	500 times		Rate 1C, capacity≥80%

## 2.2 Main components and parts

Materials	Model	Quantity	Related technical parameters	Manufacturer
Li-Ion battery cell	ICR18650-26	4PCS	Please refer to the battery cell specification	
Protection board	PCM	1PC	Please refer to the Specification of PCM	
NTC	10K $\Omega$ B value=3435	1PC		
Wire	UL1007 AWG22 100 $\pm$ 3mm	3PCS		
Connector	JST-XH-3P	1PC		

## 2.3 Dimension of the battery




### Material

1. Cell: 18650 2600mAh
2. PCM
3. NTC: 10K $\Omega$
4. Wire Red UL1007 AWG22
5. Wire White UL1007 AWG22
6. Wire Black UL1007 AWG22
7. Connector: JST-XH-3P
8. Shrink PVC

## 2.4 Specification of PCM


Items	Specification	Remarks
Over-charging Protection Voltage	4.25V $\pm$ 0.05V	
Over-charging Return Voltage	4.15V $\pm$ 0.05V	
Over-discharge Protection Voltage	2.7V $\pm$ 0.1V	
Over-discharge Return Voltage	3.0 $\pm$ 0.10V	
Over-current Protection	MIN: 7.0A MAX: 13.0A	Max. continuous: 4A/30s Peak: 4.5A

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Detection Delay Time of Over-charging Protection	0.5~1.5S	
Detection Delay Time of Over-discharging Protection	50~150ms	
Detection Delay Time of Over-current Protection	5~15ms	
Short circuit Protection condition	Exterior short circuit	
Short circuit Protection Release condition	Cut short circuit	
Consume Current	MAX: 50.0 $\mu$ A	

## 2.5 Electrical performance test

S/N	Inspection item	Standard	Testing Method
1	0.2C <sub>5</sub> A rate discharge capacity	Discharge Time $\geq$ 300min	Full charge at 20 $\pm$ 5 $^{\circ}$ C, rest for 30 min, then discharge at the same temperature with 0.2C <sub>5</sub> A to 2.75V.
2	High temp. discharge capacity	Discharge Time $\geq$ 54min	Full charge at 20 $\pm$ 5 $^{\circ}$ C, store at 60 $\pm$ 2 $^{\circ}$ C for 4h, then discharge at the same temperature with 1.0C <sub>5</sub> A to 2.75V.
3	Low temp. discharge capacity	Discharge Time $\geq$ 180min	Full charge at 20 $\pm$ 5 $^{\circ}$ C, store at -20 $^{\circ}$ C $\pm$ 2 $^{\circ}$ C for 16h, then discharge at the same temperature with 0.2C <sub>5</sub> A to 2.75V
4	Cycle life	Cycle life $\geq$ 500 times	At 20 $\pm$ 5 $^{\circ}$ C, charge battery with 0.5 C <sub>5</sub> A to 4.2V and then charge it with constant voltage to the current less than 0.02C. Stop charge and idle for 0.5~1 hour. Then discharge it with 1.0 C <sub>5</sub> A to cut-off voltage. Idle for 0.5 ~1 hour, do next charge and discharge cycle. Repeat these steps. Stop it until the continuous two cycle discharge time is less than 48 mins
5	Capacity Retention	Discharge Time $\geq$ 4 h	After full charge, store at 20 $\pm$ 5 $^{\circ}$ C for 28 days. Then discharge with 0.2C <sub>5</sub> A to 2.75V

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## Attentions

### Danger

To prevent battery from weeping, fever, exploding, please obeys the rules as follows:

Do not immerse the battery into the water or the sea, Guard against Damp;

Do not approach the heat source, like fire or heater;

Please use the appointed charger when charging;

Do not transposition the +.- poles of the battery to charge;

Do not direct-connected the battery to alternating current power supply, or auto-ignition of the vehicle;

Do not discard the battery to the fire or hyperpyretic objects;

Do not use the conductor to lead the short circuit of the + -poles of the battery. Do not put the battery with metallic conductors to transport or store, like necklace, hairpin and so on;

Do not beat or throw the battery;

Do not impale the battery with needle or some other sharp things, do not strike it with weight;

As installed safety device in the battery, please do not resolve or change any other sections of the battery to protect the inherent safety functions.

### Warnings

Do not put the battery to the microwave oven or pressure tank;

Do not use the battery with some chemical batteries (like dry battery) or different capacities and brands battery together, if the battery emits the smell, heat , changes color, be out of shape or appears any other abnormal phenomena during the charging or stored procedures, please get out the battery from the device or charger and stop using;

If cannot recharge within the charging period, please not continue charging;

Put the battery to where the kids can not touch, if the kids swallow the battery, please seeing the doctor soon;

If the electrolyte of the battery into the eyes, do not rub, should wash the eyes first, then see the doctor.

### Announcements

Do not put the battery under the high temperature places (like sunshine irradiation or car in the hot weather), or it will catch fire for the heat, reduce the performance and loss the life;


To ensure the safety, the battery should install the safety device, please not use when the static electricity is more than we need when produce, or the safety device will lose efficacy and lead the overheating, fracture, exploding and catching fire;

Please use the battery in normal as follows, or it will be overheating, caught fire, reduced performance and shorten the life;

Environment condition

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- (Temperature) Charging: 0~+45°C
- Discharging: -20~+60°C
- Store within 30 days: -20~+35°C
- Store within 90 days: -20~+30°C

If the kids use the battery, they should use as the operation instruction manual and guarantee that it must be use in normal at any time;

If the battery weeps, the electrolytes stick on the skin or cloth, use the water to wash or running water to wash  
To insure not install the battery wrong or wastage of the battery, please read the instruction carefully to install and dismounting;

If the battery will not be used for a long time, please take out of the battery from the device and store in dry and shady places;

If there is sludge on the surface of the battery, please wipe up clean before using, or it will lead bad contact with the device.

### **! Special Notice**

Keep the cells in **50% charged state** during long period storage. We recommend to charge the battery up to 50% of the total capacity every 3 months after receipt of the battery and maintain the voltage 14.4V~16.0V. And store the battery in cool and dry place.