



## 3S 4S 12A 14.8V 18650 Lithium ion Battery Protection Board

LWS is a high-tech enterprise integrating the research and development, production, sales and client service of multi-series and power type lithium battery protection boards. Our 3S 4S 12A 14.8V 18650 Lithium ion Battery Protection Board has passed CE, RoHS. We have been specialized in bms production for many years. Our products have a good quality advantage, both with high-precision E-Testing, 100% testing.

### Product Introduction

You are welcomed to come to LWS to buy the latest selling, low price, and high-quality 3S 4S 12A 14.8V 18650 Lithium ion Battery Protection Board. We look forward to cooperating with you. We hope to establish friendly cooperative relationship with your company with high quality products, reasonable price, considerate service and create a better future hand in hand. Our battery protection board always monitor the state of battery, when 4.25V or so to stop charging, the battery voltage is lower than 2.7 V or so to stop discharging, limit the output current, output short circuit to stop discharging, delay self-recovery, intelligent control of charging current, prevent damage to the battery, can greatly improve the service life of lithium battery.

### Product Parameter (Specification)

LWS PCM Specifications For 14.8V (4S) Li-ion Battery Pack			
No.	Test item		Criterion
1	Voltage	Charging voltage	DC:8.4V CC/CV
		Single balanced voltage	
2	Current	Balance current for single cell	
		Current consumption	$\leq 50 \mu A$
		Maximal continuous charging current	12A
		Maximal continuous Discharging current	12A
3	Over charge Protection (single cell)	Overcharge detection voltage	$4.25V \pm 0.025V$
		Over charge detection delay time	0.5—1.5S
		Over charge release voltage for single cell	$4.15V \pm 0.05V$
4	Over discharge protection	Over discharge detection voltage for single cell	$2.70 \pm 0.08V$

	(single cell)	Over discharge detection delay time	50ms—150ms
		Over discharge release voltage for single cell	$3.0 \pm 0.1V$
5	Over current protection	Over current detection voltage	$200 \pm 25mv$
		Charge Over current detection	$13 \pm 3A$
		Detection delay time	5ms—50ms
		Release condition	Cut load
6	Short protection	Detection condition	Exterior short circuit
		Detection delay time	200-500us
		Release condition	Cut load
7	Resistance	Protection circuitry (MOSFET)	$\leq 100m\Omega$
8	Temperature	Operating Temperature Range	$-40 \sim +85^{\circ}C$
		Storage Temperature Range	$-40 \sim +125^{\circ}C$

## Product Feature and Application

Our 3S 4S 12A 14.8V 18650 Lithium ion Battery Protection Board is suitable for the following products: Massager battery pack, 4S battery pack, LED light backup power, 12V electronic products, Solar Street light battery pack, Monitoring backup power, and other products..

## Product Details

This 3S 4S 12A 14.8V 18650 Lithium ion Battery Protection Board from overcharging, over-discharging, overcurrent, and short-circuit.

14.8V battery pack rated voltage, 16.8V battery pack full charge voltage, 14.4V battery pack rated voltage.

This board is not designed for high powered tools such as portable drills and alike

## Notes

- 1) Wire connection strictly according to the drawing, do not intentionally short circuit.
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- 2) Before charged, need to connect the cables first
- 3) When four groups of batteries are connected in series, ensure that the voltage of each group of batteries voltage is the same. If not, fill each group of batteries separately before connecting them in series. In discharge tests, the group of cells with the fastest voltage drop is the differential cell.
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