EREMIT®

Datasheet
Model LiFePo4 12.8V 4.000mAh

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This specification is applies to describe the related battery product in this Specification and the battery/cell supplied by EREMIT

All cells within this pack are originally produced by Bixell Technology limited. For further informations related to this product please contact us first.

Number	Description	Ratings	Remarks
1;	Nominal Capacity	4000mAh	At 0,2C CC discharge
2;	Minimal capacity	3950mAh	
3;	Nominal Voltage	12.8V	4S2P Cell configuration 4x 3.2V
4;	Delivery voltage	12.2 V	On delivery
5;	Charge voltage	14.6V	
6;	Standart Charging	0.5C Standart	2.5 hour nominal
		1C max.	1.5 hour rapid
7;	Standart discharging	3C CC to 2.5V	12A CC
		5C max. To 2.5V	20A max.
		10C Pulse	Pulse below 1 second. Higher pulse cause the protection to switch off

8;	Cell internal impedance	≤30mOhm	Measured at 1khz after 50% Charge
9;	Operating temperature	0-45°C	Maximum -10° - 60°C
		Recommended	10 - 34°C
10;	Internal Chemical charact.	IFR	Lithium-Iron-Phosphate

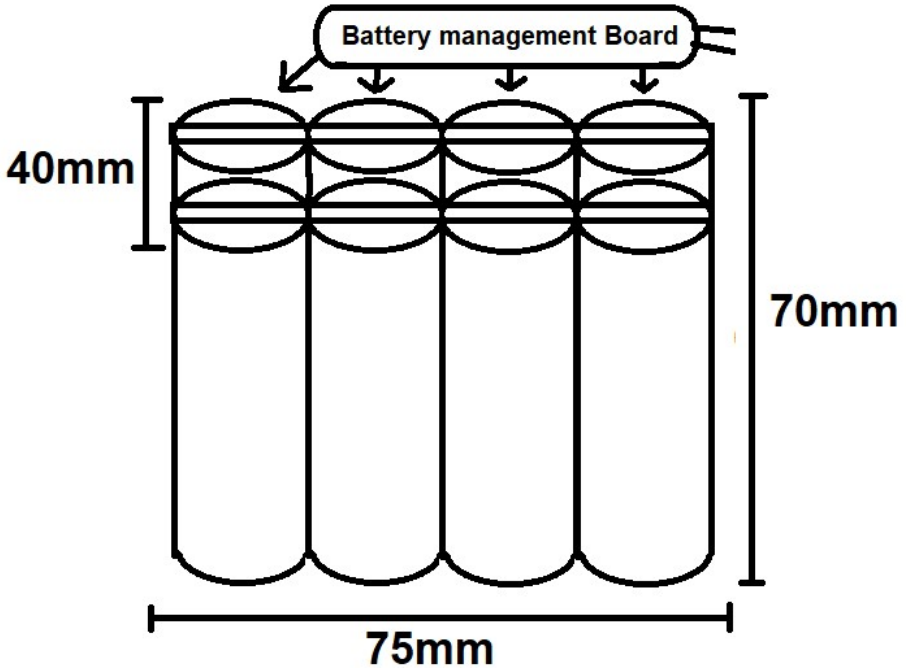
10; Long time storage (-5°C – 30°C)

If the battery need be stored for a long time, the voltage should be higher than 13.0V, and stored in the condition as storage proposal. It need at least one charge & discharge cycle every year, and need to get recharged to storage voltage every 6 month

Maximum sizes: 40 x 70 x 75mm
Maximum weight: 380gramm

Battery Characteristics

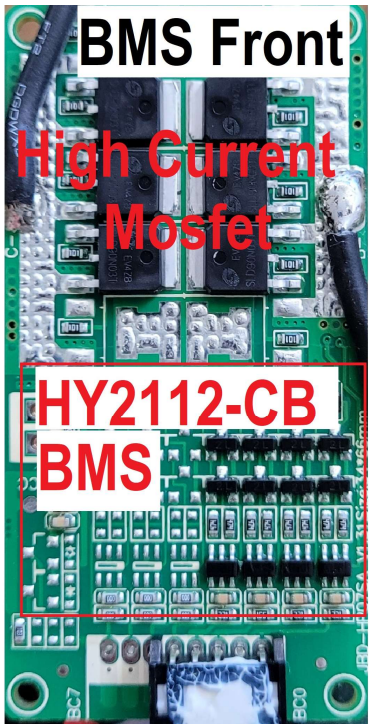
Number	Description	Ratings	Remarks
1;	Standart Charge	Charging cell initially with constant current at 0.5C to 14.6V, then with constant voltage at 14.6V till charge current is below 0.02C	
2;	Rated capacity	Capacity means the discharge capacity of the cell, which is measured with discharge current of 0.2C with 9.0V cut-off voltage after standard charge.	4000mAh
3;	Cycle life	Test condition: Carge 0.5C to 14.6V -> discharge 1C to 9.0V 75% or more of 1st cycle capacity at 0.5C discharge of operation	>2000
4;	Self discharge	After standart charging stored 1 month under storage condition descriped in page 2; then measured the capacity with 0.2C till 9.0V	Above 98% residual capacity

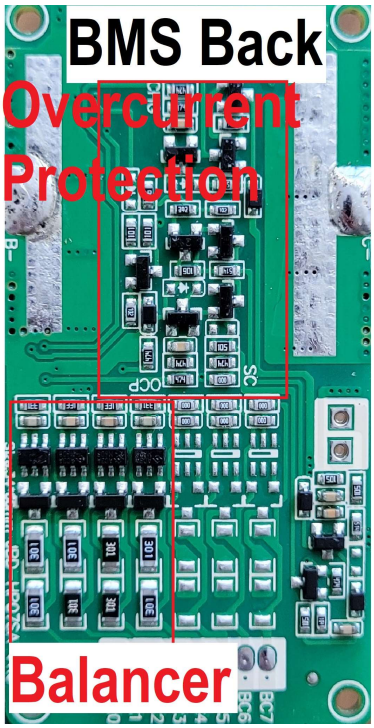


Protection circuit Data

Item	Symbol	Content	Criterion
Over charge Protection	V_{DET1}	Over charge detection voltage	3.75±0.05V
	tV_{DET1}	Over charge detection delay time	0.015～0.14s
	V_{REL1}	Over charge release voltage	3.55±0.05V
Over discharge protection	V_{DET2}	Over discharge detection voltage	2±0.1V
	tV_{DET2}	Over discharge detection delay time	95～173ms
	V_{REL2}	Over discharge release voltage	2.5±0.10V
Over current protection	V_{DET3}	Over current detection voltage	N/A
	I_{DP}	Over current detection current	40~60A
	tV_{DET3}	Detection delay time	0.1~50S
		Release condition	Cut load
Short protection		Detection condition	Exterior short circuit
	T_{SHORT}	Detection delay time	50μs
		Release condition	Cut short circuit
Interior resistance	R_{DS}	Main loop electrify resistance	V_C=3.8V；R_{DS}≤45mΩ
Balancer work	B_C	Balanced Voltage	3.55V±0.02V
	B_C	Balanced current	30mA
Current consumption	I_{DD}	Current consume in normal operation for full board	25μA Type 50μA Max

Technical drawing of protection board





Over-Discharge

Short time over discharge does not affect the battery function, but long time over discharges can damage battery performance, and can't use any more. due to its own self-discharge characteristics also lead to over-discharge, to prevent over-discharge occurs, the battery should maintain the certain electric quantity， the cell shall be charged periodically to maintain between 3.0V and 3.2V – in total the pack shall be charged to between 12.0V and 13.2V.

Over-discharging may causes loss of cell performance, characteristics, or battery functions.

The electrical products shall be equipped with a device to prevent further discharging exceeding a cut-off

Charging current ：Do not surpass the largest charging current that specification stipulated。

Charging voltage ：Do not surpass the highest limited voltage that specification stipulated。

Charging temperature ：within temperature scope that specification stipulated。

Charge with constant current, then with the constant voltage, no reverse charge, which is dangerous

No.	Part Name	Description	Q'ty	Remark
1	Cell/Pack	LiFePo4-12.8V-4000mAh	1	
2	Patterns Tape	Shrink tube, double walled acryl tape	1	
3	PCM	4x Hycon FH2112-CB form HY 6x SLD90N03T	1	
4	Wire	AWG18	2	

12. Handling of Cells

12. Warning and cautions in handling the lithium-ion cell

To prevent the possibility of the cell from leaking, heating, explosion, please observe the following

precautions:

- Don't immerse the cell in water.
- Don't use and leave the cell near a heat source, such as fire or heater.
- Don't reverse the positive and negative terminals.
- Don't connect the cell to an electrical outlet directly.
- Don't discard the cell in fire or heater.
- Don't connect the positive and negative terminal directly with metal objects.
- Don't transport and store the cell together with metal objects such as necklaces, hairpins.
- Don't strike, throw or trample the cell.
- Don't directly solder the cell.
- Don't pierce the cell with a nail or other sharp object.

- **Caution**

- If the cell leaks and the electrolyte get into your eyes, don't wipe eyes, instead, thoroughly rinse the eyes with clean running water for at least 15 minutes, and immediately seek medical attention. Otherwise, eye injury can result.
- If the cell gives off an odor, generates heat, becomes discolored or deformed, or in any way appears
  abnormal during usage, recharging or storage, immediately remove it from the device or cell charger and stop using it.

Period of Warranty

The period of warranty is one year from the date of shipment. Replacement is guaranteed within warranty if battery with defects proven due to manufacturing process instead of the customer's abuse and misuse.