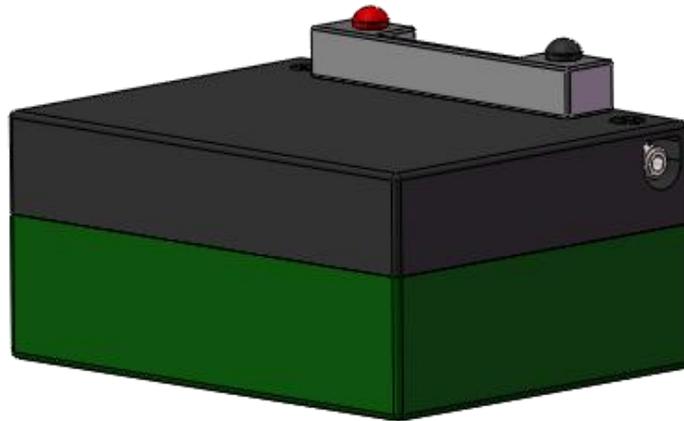


**EverExceed Golf Trolley Lithium Iron
Phosphate Battery
LEV12-16 Product Manual**



Thank you very much for your purchase of our company's products, Please read the instruction carefully before using, lest cause unnecessary loss.

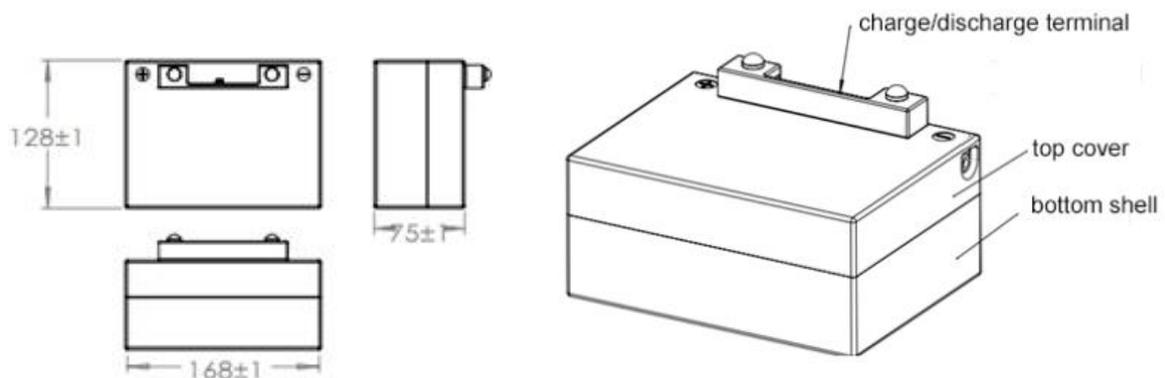
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1. Product Specification

No	Item	Specificati
1	Product Name	LiFePO4 battery pack
2	Product Model	LEV12-16
3	Nominal Voltage	12.8V
4	Rated Capacity	16±1Ah(C5)
5	Energy	204 Wh
6	Internal Resistance	≤40mΩ
7	Weight	2.2±0.1kg
8	Size	(168±1)mm×(128±1)mm×(75±1)mm
9	Voltage	Charge voltage is 14.4±0.15V, Standard cutoff voltage is about 10.0V
10	Charger Current	≤5A
11	Discharge Current	16A
12	Max Continuous Current	≤25A(≤5min)
13	Passive Protection Function	over charge protection, over discharge protection, over current protection, temperature protection, balanced function
14	Charging Terminal	M6, T-30A Anderson connectors
15	Discharge Terminal	M6, T-30A Anderson connectors
16	Cycle Life	≥2000 cycles, capacity retention rate≥80%). (Standard charge at 0.2C (A), rest 0.5~1 h; discharge at 0.2C to cut off voltage , rest 0.5~1h, repeat the above steps until 2000 cycles.)

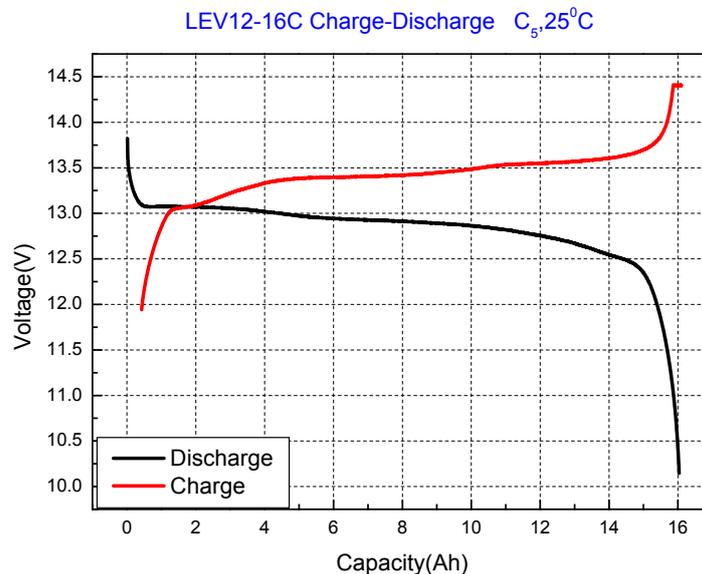
2. Battery Pack Parts



2. Protect Circuit Module Specification

NO.	Items		Parameters
1	Charge Mode		CC/CV
	Single cell Charge balance Voltage		3.6±0.025V
2	Current	Max. Charge Current	≤25A
		Continuous Current	15A
		Max continuous current	25A
3	Over charge protection	Over charge protection voltage	3.8±0.025V
		Over charge release voltage	3.6±0.05V
4	Over discharge	Over discharge protection voltage	2.0±0.08V
		Over discharge release voltage	>2.0V
5	Temperature	discharge protection Temperature	65±5℃
		charge protection Temperature	65±5℃
6	Over current	Over current protection current	Yes
		Over current release	Cut off load
note	The parameters of the circuit are only protected under the standard test,the battery pack is subject to the Product Specification)		

4.Product Curve



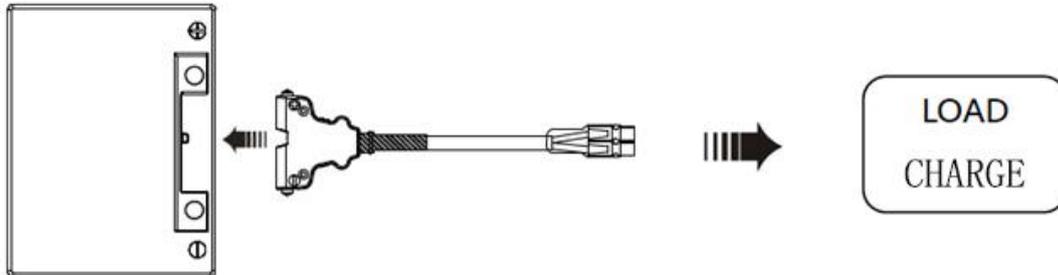
5. Battery pack using method

5.1 charge

charging port of battery pack is connected to charger compatible with it ,and then charge . Charging Voltage:14.4±0.1V,charging current≤5A,Internal:passtive outside:positive. Do not reverse.

5.2 discharge

Discharge port of battery pack is connected to loading with T-Anderson connectors/T- Aviation plugs ,etc,and then discharge . Do not reverse.



6. Packing

Packing list:

Description	specifications	quantity
Battery pack	12.8V 16Ah	2
Dessicant	----	1
Connectors	T-30A Anderson connectors	1
Charger	14.4V Series	1
Handbag	----	1

It is our company conventional packaging only for reference, whichever is the actual package

7. Extra tips

You encounter difficulties, Please call our service phone, We will try our best to provide you with service and help.

- please do not be machined on the circuit board, Damage may cause functional failure of the internal circuit;
- please don't let the force and deformation of the product, Damage to electronic components or lines, Make the product unstable.
- Please do not disassemble the shell., Lest you cause unnecessary damage to you;
- The charging port polarity reverse burn internal circuit board , Please pay attention to the port when the connection.

8. Relevant statement

Protect Circuit Module Specification are only results of standardized tests, this is for your reference only.

8.1 Standard Test Conditions

Battery test must be within 1 month after production.

All tests in this specification should be in standard atmospheric conditions:

temperature: 25± 2°C, relative humidity: 65±20%

8.2 Standard charge

Charge the battery with Lithium ion battery special test cabinet, supply standard voltage, standard current until current down to 0.05C₅.

8.2.1 Standard discharge

Discharge the battery with standard current on special test device, constant discharge to standard discharge voltage or until the battery stopped .

- Battery standard charge voltage is 14.4V, Standard cutoff voltage is 10V
- Standard current is C₅ .

8.2.2 Capacity retention rate

Test Methods	Test Standards
Standard charging , in standard test conditions on hold for 28 days ,standard discharge .	capacity retention rate≥80%

8.3. Cautions



Please pay attention to followings in case of battery will have leakage, heat etc.

- Do not immerse the battery in water or seawater, and keep the battery in a cool dry surrounding if it stands by.
- Do not use or leave the battery at high temperature as fire or heater. Otherwise, it can overheat or fire or its performance will be degenerate and its service life will be decreased.
- Do not reverse the position and negative terminals.
- Do not reverse polarity charging.
- Do not connect the battery electrodes to an electrical outlet.
- Do not short circuit. Otherwise it will cause serious damage of the battery.
- Do not transport or store the battery together with metal objects such as hairpins, necklaces, etc.
- Do not strike, trample, throw, fall and shock the battery.
- Do not directly solder the battery and pierce the battery with a nail or other sharp objects.
- Do not use the battery in a location where static electricity and magnetic field is great, otherwise, the safety devices may be damaged, causing hidden trouble of safety.
- Please use special charger for charging.

- Please charge the battery within 12 hours after use .
- Charging current should be less than maximum charge current specified in the Product Specification , Charging current bigger than recommended current may damage the battery.
- Discharging current should be less than maximum discharge current specified in the Product Specification ; Discharging current bigger than recommended current may damage the battery.
- 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 a certain voltage :(13.2~13.6)V , 2month one cycle , Over-discharging may causes loss of cell performance, characteristics, or battery functions.
- If the battery leaks and the electrolyte gets into the eyes, do not rub the eyes, instead, rinse the eyes with clean water, and immediately seek medical attention. Otherwise, it may injure eyes.
- If the battery gives off strange odor, generates heat, becomes discolored or deformed, or in any way appears abnormal during use, recharging or storage, immediately stop charging, using, and remove it from the device.
- In case the battery terminals are dirty or oxidation, clean the terminals with a dry cloth before use. Otherwise poor performance may occur due to the poor connection with the instrument.
- Tape the discarded battery terminals to insulate them.
- The lithium ion battery charge discharge shallow is beneficial to improve the cycle life, proposal user each discharge is put to the nominal capacity of 80%.
- Do not combine the battery pack in series or in parallel.

8.4. Installation guide

8.4.1 Battery checking

- After receiving the battery, you should first check the packing carefully. During the handling process, please ensure there's no shock on the battery.
- Please check the battery case and accessories if there's any damage or leakage, if so, please contact us immediately.
- Please check the output connector is correct or not, measuring the positive and negative voltage and the voltage, if it's within the normal standard.

8.4.2 Precautions

- No smoking or fire during installation to avoid short-circuit of battery and prevent equipment damage or personal injury.
- The battery should be installed under a condition with well-ventilated and no sunlight. Don't

put it under place with possible flooding.

- When fastening battery terminals, please don't use excessive force, or the terminals could be damaged.
- Use a dry cloth to clean the battery package, please don't use oil or other volatile organic solvents to clean the battery case, or it may damage it.
- Please make sure the positive(+) & negative(-) polarity is correct connected, or it may cause fire or damage the battery or the equipment.

8.4.3 Battery Installation

- Clean up the position of battery mounting, make sure there's no dust or metal objects or others.
- Put the battery in right place
- Make good connection of terminals between the equipment and battery.
- After the connection, please check if it's well connected, positive and negative is reversed, if there's dust or debris.
- Start testing the equipment if it could be well working with battery.
- Finished.

8.5. Battery care and maintenance

- When the battery is low, please charge in time. This could ensure longer cycle life. If the battery can't be charged in time and let it under power shortage condition, it may effect the cycle life.
- The battery should be installed in the air circulation, dry, clean environment. Please avoid flammable items during the charge/discharge.
- Discharge temperature: $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$. Humidity: $\text{RH} \leq 85\%$. When the temperature is more than 45°C , please note ventilation. When the environment humidity is higher than 85% , please pay attention to protect. Charging temperature: $0^{\circ}\text{C} \sim +45^{\circ}\text{C}$. Humidity: $\text{RH} \leq 85\%$, When the environment humidity is higher than 85% , please pay attention to protect ; Storage temperature: $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$ (Best temperature is $15^{\circ}\text{C} \sim 25^{\circ}\text{C}$ in dry environment). The battery will be effected by the temperature, it could be showed by the change of capacity, it's normal.
- Don't use organic solvents to clean the battery case. If for battery fire accident, please use dry

powder fire extinguisher or sand.

- Battery is a consumable product with limited cycle life. Please change in time when the capacity can't reach the requirement to avoid any lose of the user.

8.6. Battery common faults and solutions

8.6.1 Battery voltage is too low after fully charged.

- Battery was in Long-term storage with no used, not in accordance with the provisions for maintenance either.

Solution: Charge the battery can be solved.

- Battery suffered fierce collision, with character-External battery case damaged or with electrolyte odor.

Solution: It's not in the scope of maintenance generally. If needing maintenance, we need the confirmation of the problem whether on the output line or the battery itself.

First, open the battery case, check the battery P + / C + and P - / C - lines or joints damaged or not. If damaged, it needs to be replaced. Then, instigating smell odors method to determine the battery, if there is irritation electrolyte odor, indicating that the battery has been leaking. You need to test the voltage of each series. If the voltage of one series is very different with much lower voltage, then this series needs to be replaced.

- Insufficient capacity

Solution: To charge and discharge the battery with 3-5 cycles generally.

8.6.2 Battery voltage is zero or low after the battery is fully charged (charger displays full).

- Battery disconnect

Solution: Remove the battery to check whether the line is broken or not, the solder joints come off or not, nickel belt breaks or not, and then repair according to the damage situation.

- PCB does not work

Solution: First, make sure the cable is contact with the protective board well, then observe solder is off or not. If the above conditions are normal, please test voltage between B+B- and P+ P- voltage, then the board would be failed if the voltage difference is very high. Then please do testing in detail on protection board, if not pass, please change another new PCB.

8.6.3 Battery voltage instability

- Faulty soldering

Solution: To test the resistance with the internal resistance tester, and confirm the internal resistance of the battery exceeding a predetermined value or not. If not, the battery would be in faulty soldering condition, the battery needs to be unpacked to be welded again.

- Protection board abnormal

Solution: Replace the protection board.

- Connector or terminals in poor contact condition

Solution: Replace the terminals or connectors

8.6.4 Battery works properly in charging but could not discharge or discharging well but could not charge.

Solution: The PCB is damaged; you need to replace the protection board.

8.7. Other technical indicators

If you need battery protection parameters and other related parameters, please contact our sales or technical staff, we will provide you as soon as possible.

9. Products Liability

Everexceed Industrial CO., LTD is not responsible for the incident caused by not obeying the Manual. Before using the battery, you should read the specifications, usage instruction and some attentions carefully to learn its application method and areas. If the phenomenon such as error using method or wrong circuit connection, or input power data, working index are inconsistent with the Manual, cause damage to product, load and its accessories, we are not responsible for it.

9.1 Address

If you have any questions, please contact the following address:

ADD: Floor 19, Kechuang Building, Hengchangrong High-tech Industrial Park, Dezheng Road, Shiyan, Bao'an District, Shenzhen City, China.

<http://www.everexceed.com>