



## PRODUCT SPECIFICATION

DOC NO: EB-201103

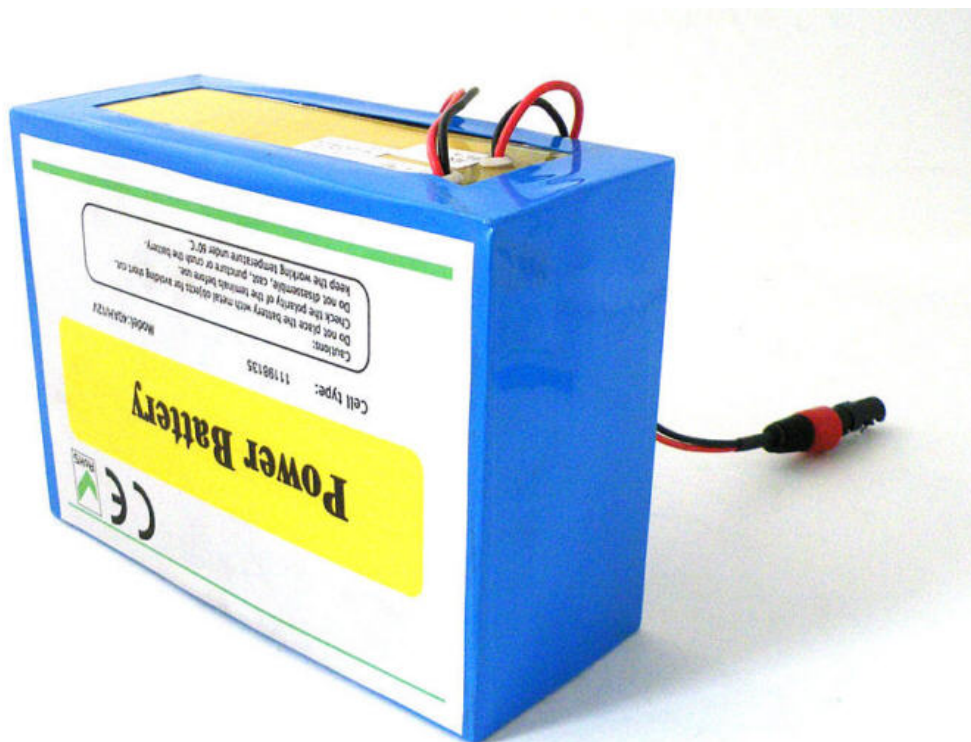
REV : A

PAGE: 1 of 6

# PRODUCT SPECIFICATION

**PRODUCT:** LiFePO4 Battery Pack

**MODEL:** 12.8V40Ah(18650)



**Contents**

1. Preface ..... 3

2. Battery Type and Size..... 3

2.1 Battery Type and Specification ..... 3

2.2 Battery Pack Dimension ..... 3

3. Battery Pack Specification ..... 3

4. PCM Electrical Characteristics ..... 4

5. Test..... 5

5.1 Battery Charge/Discharge Curve ..... 5

5.2 Vibration Test..... 5

5.3 Drop test ..... 5

6. Usgae methods and Cautions ..... 5

6.1 Usgae methods..... 5

6.2 Cautions ..... 5

7. Warranty Period & Product Liability ..... 6

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DOC NO: EB-201103REV : APAGE: 3 of 6

## 1. Preface

This specification describes the type and size, performance, technical characteristics, warning and caution of the GEB12.8V/40Ah LiFePO<sub>4</sub> rechargeable pack. The specification only applies to 12.8V/40Ah LiFePO<sub>4</sub> pack supplied by OÚċ Āā ĩ } Āā ĩ &^.

## 2. BATTERY TYPE AND SIZE

### 2.1 Pack Type and Specification

ĀĀ 12.8V/40Ah

Battery pack specification Voltage/Capacity

### 2.2 Battery Pack Dimension

The material of the battery pack is aluminum alloy >200mm \*135mm\*145mm

#### 2.2.1 Output wire specification

Positive output wire	Red one wire with 14AWG	Length: 25cm
Negative output wire	Black one wire with 14AWG	Length: 25cm

## 3. Battery Pack Specification

ITEM	SPECIFICATION
Pack assembled mode	27P4S-18650
Typical Capacity	40.5Ah(0.2C, 25°C)
Minimum Capacity	39Ah(0.2C, 25°C)
Nominal Voltage	12.8 V
Charging Ending Voltage	14.6±0.1 V
Discharge Ending Voltage	10.0±0.1 V
Standard Cont.Charging Current	8.0A
Fast Cont.Charging Current	15.0A
Standard Cont.Discharge Current	8.0A
Fast Cont.Discharge Current	20.0A
MAX Cont.Discharge Current	40A
Peak Current	80A (<1S)
Internal Resistance	<100mΩ
Weight	<5.6kg

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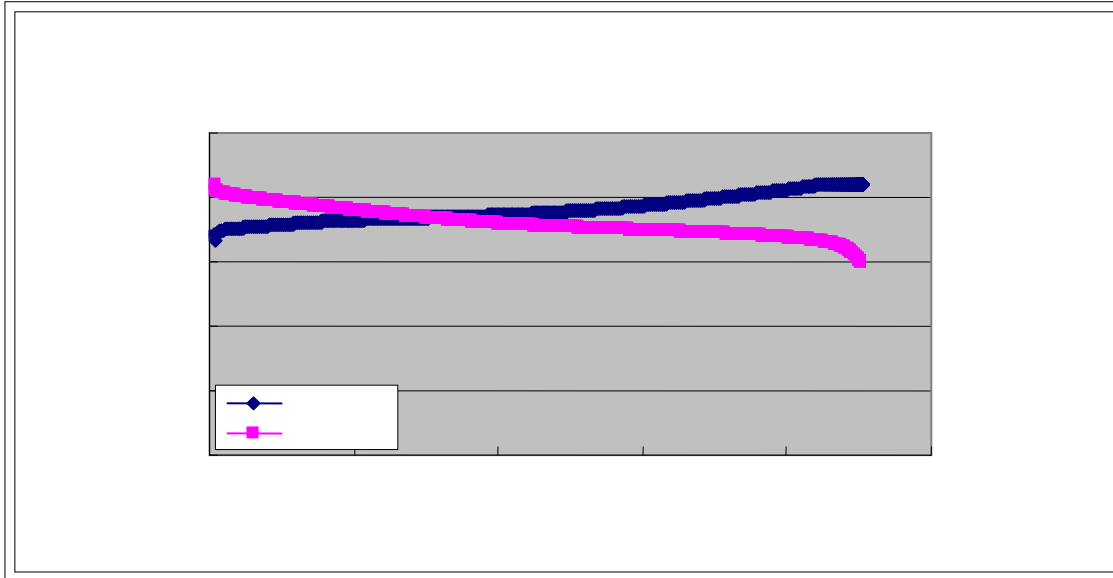
PAGE: 4 of 6

**4. PCM Electrical Characteristics**

TYPE	FUNCTION	ITEM	PARAMETER	ACCURACY
BATTERY	Chemical system	LiFePO <sub>4</sub>		
	Capacity	40Ah		
	Working voltage	3.2V		
	Series number	4		
The function of the PCM	Overcharge protection	Over charge voltage	3.9	±50(mV)
		Output delay of overcharge	1000	±100(mS)
		Over charge release voltage	3.7	±50(mV)
	Over discharge protection	Over discharge voltage	2.5	±50(mV)
		Output delay of over discharge	40	±50(mS)
		Over discharge release voltage	2.7	±50(mV)
	Over current protection	Over current protection	100	±2(A)
		Output delay of over discharge-current protection	500	±50(mS)
		Qualification of release from over current protection	Cut off load	
	Short circuit protection	Short circuit protection current	500	±10(A)
		Output delay of short protection	200	±100(μS)
		Qualification of release from short protection	Cut off load	
	Temperature protection	Temperature protection (°C)	65	±2(°C)
		TemperatureProtection Release (°C)	55	±2(°C)
	Cell balance	Bleed Current (mA)	100	±60(mA)
		Bleed Start Point (V)	3.60	±10(mV)
		Bleed Accuracy (mV)	30	±5(mV)
	Main circuit resistance	Main circuit resistance (mΩ)	<50	
	Current Consumption	Current Consumption (mA)	<2	

**5. Test**

**5.1 Battery Charge/Discharge Curve**



**5.2 Vibration test**

Pack installed onto the vibration desk with clamps. Equipment parameters are as follows:

- a: direction: up and down single vibration
- b: frequency: 10~55Hz
- c: max acceleration: 30m/s<sup>2</sup>
- d: amplitude: 0.38mm
- e: time: 10min.

During the test, Nickel film without shedding, no scratch, the voltage is OK.  
the voltage is OK.

**5.2 Drop test**

Packs dropped from a height of 0.5 meter to cement ground, packs shall be dropped in each of three mutually perpendicular directions. Total drop times are 6. After that, Nickel film without shedding, no scratch, the voltage is OK.

**6. Usgae methods and Cautions**

**6.1 Usgae methods**

1. Charge: Connecting the battery pack to the charge controller, connect the charger to recharge.
2. Discharge: Connecting the battery pack to the load ,connect the load to discharge.
3. When you combine the battery with series or parallels, if there are oxidation layer on the surface, you should brush surface to the metal glow with thin steel brush to lower the connective resistance to the minimal resistance.
4. When combining with many batteries, if the voltage between the two electrodes is over 36V, the safe voltage for human beings, to guarantee the safety, you should not touch the two electrodes with your body.

**6.2 Cautions**

1. If shelve a long time suggested that the battery voltage 12.8V-13.5V, need for regular recharging (even if not use), must charge and discharge for three months one time;
2. Do not expose the battery to extreme heat or flame.
3. Do not short circuit, over-charge or over-discharge the battery pack;
4. Do not disassemble or modify the battery pack.

# PRODUCT SPECIFICATION

DOC NO: EB-201103

REV : A

PAGE: 6 of 6

5. Do not handle or store with metallic like necklaces, coins or hairpins, etc.
6. Do not reverse the polarity of the battery pack for any reason.
7. Do not immerse the battery pack in water or sea water, or get it wet.
8. Use a constant current, constant voltage (CC/CV) lithium-ion (Li+) battery charge controller.

## **7.Warranty Period& Product Liability**

Warranty period begins from the delivery date, and is exclusively continued 6 months.

GEB is not responsible for the incident caused by not obeying the specifications.

When the specification is modified, GEB does not inform the customer.

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 specifications happen and cause damage to production, circuit and its accessories, we are not responsible for it.