

## 1. Overview

# 12.8V100AH Module Specification

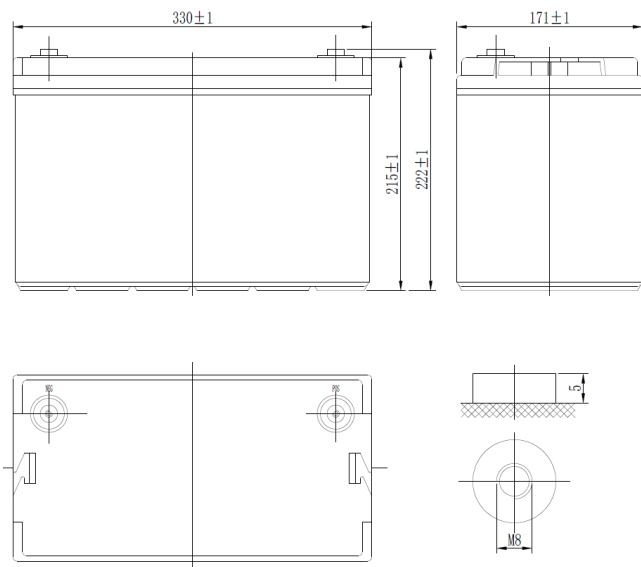
LFP12-100EV is Lithium iron phosphate battery module which designed for Telecom application. This battery module integrated with intelligent BMS inside, has big advantages on safety, cycle life, energy density, temperature range and environmental protection. This product specification describes the type, size, structure, electrochemistry performance, service life, and BMS characteristics.

## 2. Battery Module

The battery module consists of single LFP cells, wire, BMS and metal container.

- Packed with high performance LFP single cell, long life, safety and wide temperature range
- High energy density, small size, light weight, no pollution;
- Packing with single cell container, fire retardant wire and copper connecting bar, stable and safe.
- Built-in BMS, with battery voltage, current, temperature and health management.
- LBluetooth monitoring function.
- Below 0 ° C, charging heating is supported
- Flexible customization of dimensions
- 10 years design life, Stable performance, maintenance free.
- Do not use more than four batteries in series. In series or parallel connection, please fully charge the batteries separately. The highest and lowest parallel voltage should not exceed 0.3V.

### ► Pictures



### ► Battery module specification

| Item                          |                                 | Specification   | Conditions                              |
|-------------------------------|---------------------------------|---|---|
| Nominal                       | Voltage                         | 12.8V   | 25°C, 0.2C                              |
|                               | Capacity                        | 100Ah   |   |
| Module weight                 |                                 | 10.18kg   | ±0.5kg                                  |
| Dimensions(W*D*H), mm         |                                 | 330x171x222   | ±2mm                                    |
| Operating parameters          | Charging Voltage                | 14.4V   |   |
|                               | Discharging Voltage             | 10V   | Recommended                             |
|                               | Charging current                | Max constant charge:100A                                | Recommended 20A                         |
|                               | Discharging current             | Max constant discharge:100A                             |   |
| Pulse discharge: 150A for 10S |                                 |   |   |
| Temperature                   | Charge range                    | -20°C~45°C  | ≤0°C, charging current needs to be ≥10A |
|                               | Discharge range                 | -20°C~60°C  |   |
|                               | Storage range                   | -20°C~45°C  |   |
| BMS                           | Built-in BMS                    | Voltage, current, temperature management & cell balance | communication                           |
| Service life                  | Design life                     | >10years  |   |
|                               | Cycle life (90%DOD to 80% end)  | >2000 times   | 0.2C, 25°C                              |
|                               | Cycle life (100%DOD to 50% end) | >6000 cycles  | @0.5C, 25°C                             |

## 3. BMS specification

BMS provides complete management and protection for the battery.

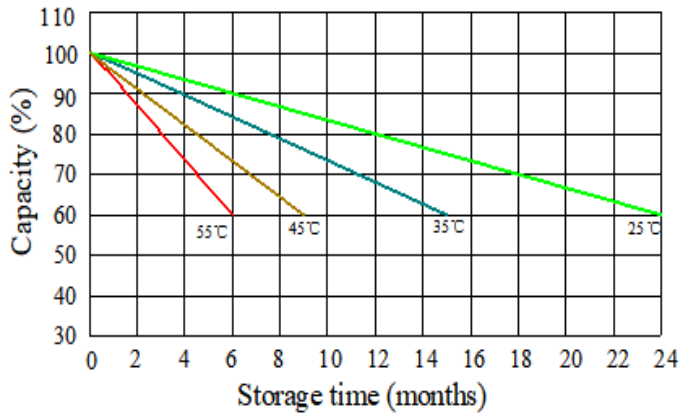
- Voltage warning and protection for module and each single cell.
- Current warning and protection, and the maximum operating current can be customized.
- Temperature warning and protection, 1 sensors for battery pack and 1 sensor for BMS.

► BMS parameters.

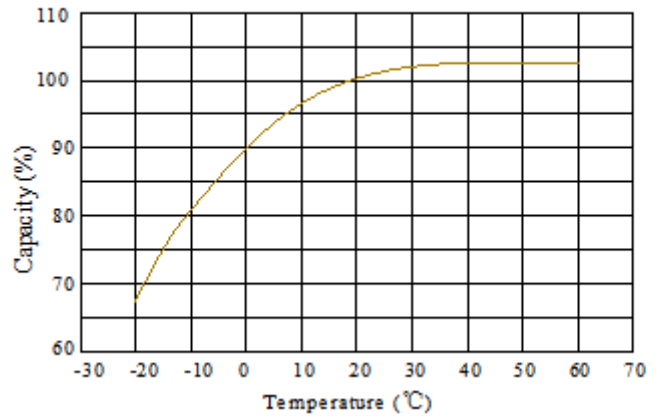
| Item      |                            | Parameters   |                   | Condition   |
|-----------|----------------------------|--|-------------------|---|
| Charge    | Cell voltage protection    | 3.8V   | Delay 1~2S        | Recover when discharge current >1A or Cell voltage<3.6V or module voltage<14V |
|           | Module voltage protection  | 14.8V  | Delay 1~2S        |   |
|           | Over charging current 1    | 105A ~155A   | Delay 10~20S      | Turn to pre-charge mode and try to recover in every 3min                      |
|           | Over charging current 2    | ≥155A  | Delay 2~3S        |   |
|           | Temperature protection     | >70°C  | Delay 1~2S        | Recover when >0°C or <60°C  |
| Discharge | Cell voltage protection    | 2.1V   |                   | Recover when charge current >1A or Cell voltage>3.1V or module voltage>12V    |
|           | Module voltage protection  | 9.6V   | Delay 1~2S        |   |
|           | Over discharging current 1 | 105A~155A  | Delay 10S         | Recover when charging current>1A, or recover in every 60S                     |
|           | Over discharging current 2 | ≥155A  | Delay 2~3S        |   |
|           | Short circuit              | >300A  | Delay 0.1mS       |   |
|           | Temperature protection     | <-20°C or >75°C  | Delay 1~2S        | Recover when >-10°C or <65°C  |
| BMS       | PCB Temp protection        | >95°C  | Delay 1~2S        | Recover when <75°C  |
|           | Cell balance               | 100mA  | Passive balance   | Cell voltage difference > 40mV  |
|           | Temperature accuracy       | ±2°C   | Cycle measurement | Measuring range -40~100°C   |
|           | Voltage accuracy           | ±20mV  | Cycle measurement | For cells and module  |
|           | Current accuracy           | FSC±5%   | Cycle measurement | Measuring range -200~+200   |
|           | SOC                        | 5%   |                   | Integral calculation  |
|           | Communication ports        | bluetooth  |                   | Can be customized to match the device   |
|           | Heating function           | 0 ° C Enable the heating function.<br>When the battery temperature is higher than 0 ° C, resume charging.<br>Charging current ≥10A |                   |   |

## 4. Battery module performance Curve

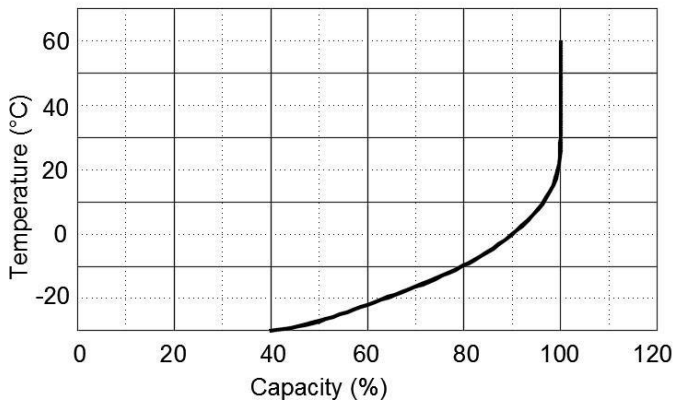
Self-discharge at different temperature



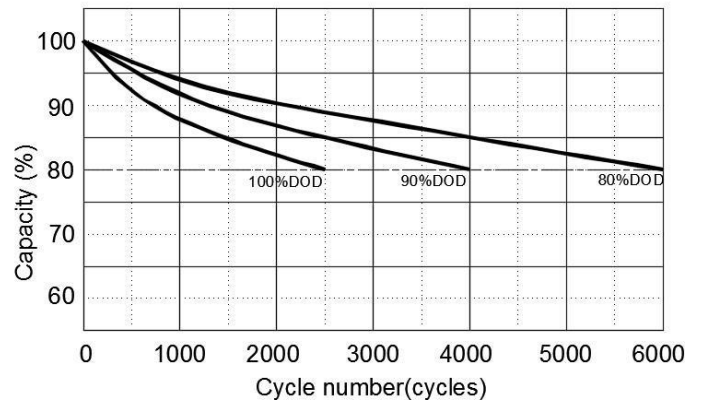
Temperature effects on capacity at 0.5C



Discharge capacity with different temperature @ 0.5C



Cycle life with DOD @ 0.5C, 25°C



Performance may vary depending on, but not limited to cell usage and application. If cell is used outside specifications, performance will diminish. All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate.