

DATASHEET AND Specifications



Model: LFP05012
12V 50AH // MAX CHARGE/
DISCHARGE CURRENT: 50A/50A



LFP05012LCD

The LiFePO₄ battery pack LFP05012LCD has a built-in BMS system with various protection measures.

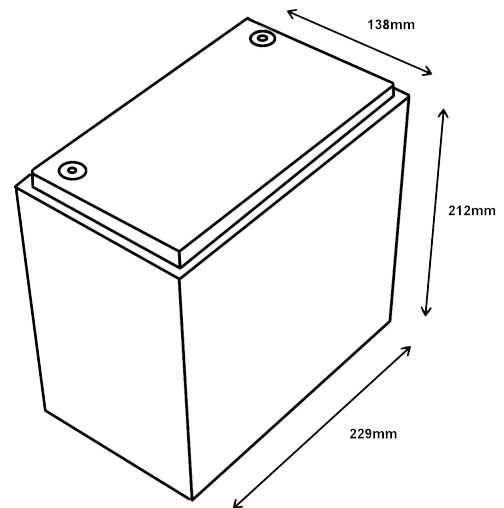
Although this 12V 50Ah battery pack may only be used in parallel systems; it has significant advantages as a backup battery for various applications. The LFP05012LCD features high power density, small size, long service life, resistance to high temperature, fast charging and discharging, and an effective design.



CHARACTERISTICS

1. Positive electrodes made of LiFePO₄ (LFP), ensuring higher safety and a long service life.
2. Compatible with a variety of power supply devices.
3. Built-in BMS system with multiple protections, which ensures high reliability of the battery pack.
4. Low internal resistance, with efficient internal balance of the battery control circuit.
5. Wide working temperature range and high reliability.
6. Support for parallel connection of battery packs.
7. 4000+ Life Cycles

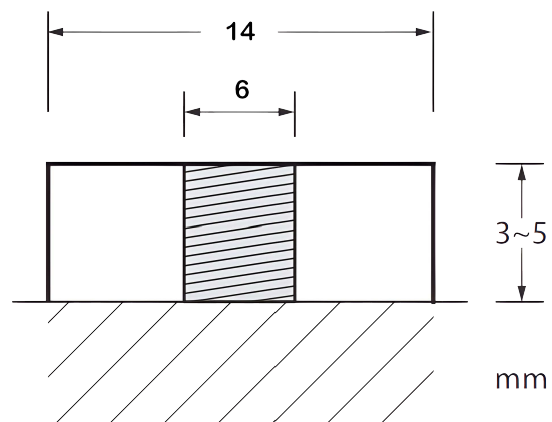
BATTERY DIMENSIONS



FEATURES

- Built-in BMS with Charging current limitation.
- Built-in automatic protection for over-charge, over-discharge, low-temperature, and over-temperature conditions.
- Internal cell balancing.
- Maintenance free system.
- Plug And Play replacement for Lead Acid batteries

TERMINAL DIMENSIONS



SPECIFICATIONS

| | |
|---------------------------------|---|
| Voltage | 12.8V |
| Nominal Capacity (0.2°C, 5A) | 50 Ah |
| Normal Energy (0.2°C, 5A) | 640Wh |
| Max. Charge Current | 50 A |
| Max. Constant Discharge Current | 50 A |
| Charge Voltage | 14.2 - 14.6V |
| Cut-off Voltage | 10V |
| Charging Standard | CC: 0.2C to 14.4V CV: 14.4V Floating: 13.6 - 13.8V Charging end current: 0.01C |
| Calendar Life (25°C) | >10 years |
| Cycle Life (0.2C, 25°C) | 8000 with 50% DOD 4000 with 80% DOD 3000 with 100% DOD |
| Operating Temperature | Charging: -0°C ~ +65°C Discharging: -20°C ~ +75°C |
| Storage Time / Temperature | -20°C ~ +60°C |

GENERAL INFORMATION

| | |
|---------------------------|--------------------------------|
| Casing Material | ABS case |
| Assembly | 4S1P Single cell Capacity 50Ah |
| Recommended Charging Type | CC-CV-Float charge |
| BMS | Integrated |

MECHANICAL SPECIFICATIONS

| | |
|------------------------------|-------------------|
| Dimensions (L x W x H) in mm | 223 * 150 * 178 * |
| Weight | 5Kg |
| Terminal | M6 |
| Mounting Options | Any Directions |

GENERAL WARNINGS

All other warnings are indicated on battery package:

- Use the recommended charger stated on package.
- Don't throw battery into water, fire, or expose to hot temp.
- Do not disassemble the battery.
- LFP05012LCD batteries **cannot** be used in series.

PREVENTATIVE MEASURES

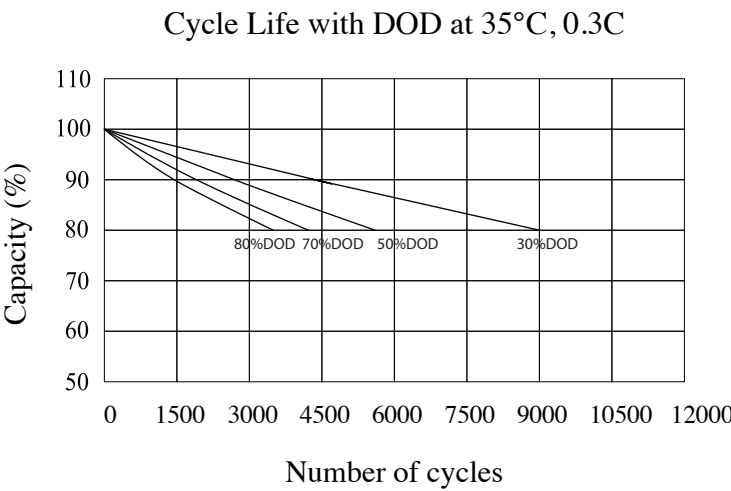
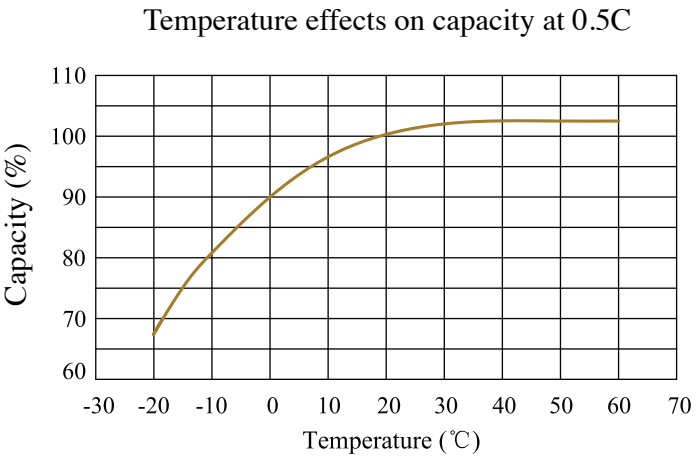
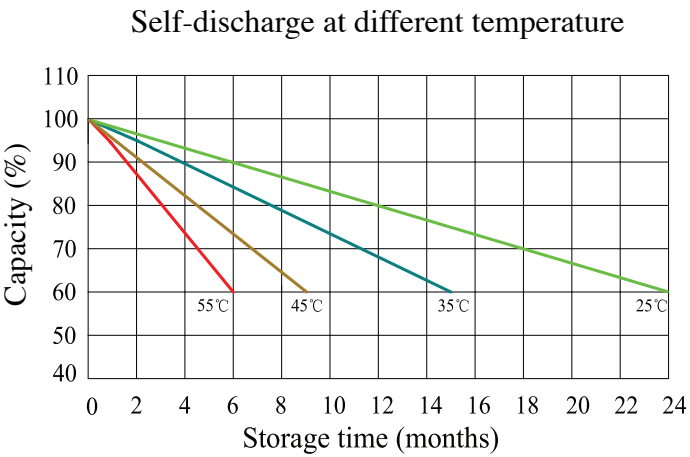
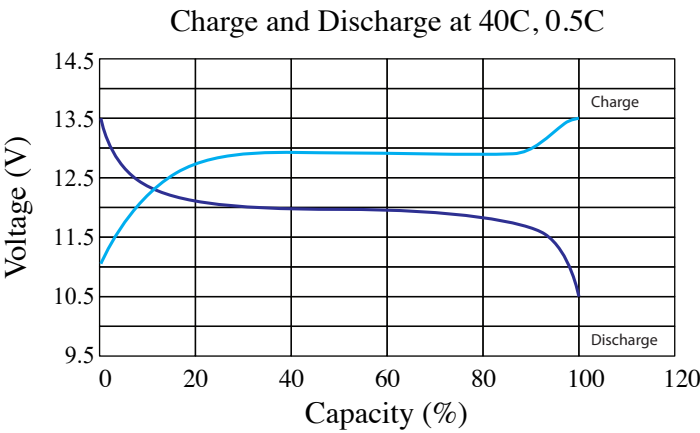
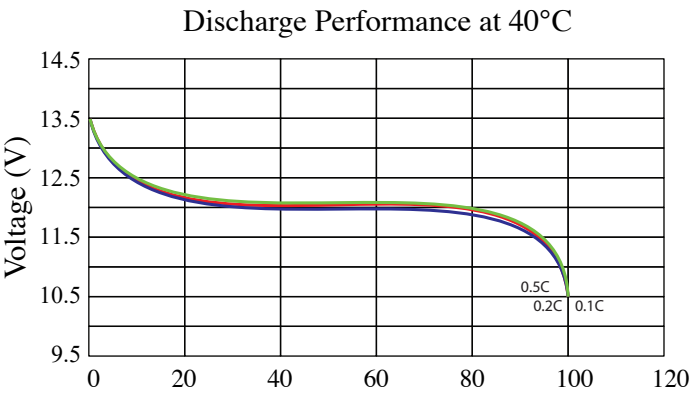
In order to prevent leaking, overheating, and or exploding, please read the following preventative measures:

- Do not expose battery to water. Keep the unit under dry, shady, and cool conditions when not in use.
- Never keep the battery near high-temperature sources like fire, direct sunlight, dryer, heaters, ovens, etc.
- Please use the stated charger or a charger that meets the requirements and compatibility of the battery.
- Internal battery damage may occur if wiring is reversed between the positive and negative terminals.
- Refrain from cutting the battery into the socket directly.
- Prevent contact of metal materials near exposed positive and negative terminals. Especially when the unit is active.
- Never ship or store the battery together with metal or metallic items such as aluminum, copper, steel, etc.
- Keep the battery in a safe space where it cannot be knocked down, stepped on, or physically damaged.
- Take care to not cut or pierce the battery with a nail or other edged/sharp tools.
- Never use or keep the battery under high temperature. Doing so may compromise the battery and cause it to overheat, catch fire, lose functionality, or reduce its life.
- Never use the battery under strong static or magnetic fields. It may damage the BMS and cause malfunctions.
- If the battery is leaking; keep electrolyte away from eyes. If exposed, please do not rub eyes, wash eyes with water, and go to the nearest hospital for treatment ASAP.
- If the battery is emitting a peculiar smell, exhibiting overheating, distortion, or appearing in any way abnormal physically during use, storage, or charging, please take it out of the device, storage, or charger and stop using immediately. Place malfunctioning battery in a safe space where it cannot damage other items or cause a fire.
- If the terminal is dirty, please clean it before using.
- Please encase the terminals with the isolative paper if you wish to discard the battery and to prevent any fires.

BMS PARAMETERS

| Type | | Function | Setting value | Recovery |
|--------------|-------------|---|--|---|
| | | | LFP05012LCD 12.8V 50Ah | |
| Voltage | Charge | Cell Voltage Protection | 3.65V | Recover at 3.5V |
| | | Total Voltage Protection | 14.6V | Recover at 12.0V |
| | Discharge | Cell Voltage Protection | 2.5V | Recover at 2.75V |
| | | Total Voltage Protection | 10.0V | Recover at 11.0V |
| Current | Charge | Over Current Protection 1 | 52A | Delay 10s, recovery 32sec |
| | | Over Current Protection 2 | >102A | Delay 3s, recovery 1min |
| | Discharge | Over Current Protection 1 | 52A | Delay 30s, recovery 32sec |
| | | Over Current Protection 2 | >102A | Delay 3s, recovery 1min |
| | | Short Circuit Protection | >150A | Delay 1mS, Recovery 5 Ssec |
| Temp. | Cell Temp 1 | Low temp protection | Charging $< 0^{\circ}\text{C}$ Discharging $< -20^{\circ}\text{C}$ | Delay 1mS |
| | Cell Temp 2 | High temp protection | Charging $\geq 65^{\circ}\text{C}$ Discharging $\geq 75^{\circ}\text{C}$ | Delay 1mS |
| | PCB | Range | $\geq 95^{\circ}\text{C}$ | Recovery at 74°C |
| Cell Balance | Balance | Balances cells during charging process. | $V_{\text{Max}} \geq 3.40\text{V}$ and $V_{\text{Max}} - V_{\text{Min}} \geq 40\text{mV}$, Start balance | All cell voltages $\leq 3.65\text{V}$ and $V_{\text{Max}} - V_{\text{Min}} \leq 40\text{mV}$, Stop balance |

PERFORMANCE CURVES



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.