BPC87

LiFePO4 Battery Pack | Emergency Lighting | 3.2V, 3.4Ah

Benefits

Compact: Easy integration into space-limited emergency luminaires

Protected: Safeguards against overcharge, deep discharge and overheating

Quick: Screw-mount bracket for faster fixture assembly

Applications

Built-in Emergency sign

Offices, Classrooms

Industry, Healthcare Spaces

For more details on battery precautions and usage, please visit the following link:

https://hytronik.com/service/downloads (LifePO4 Battery Precautions and Usage)

Product Description

- Charge efficiency > 90 %
- Low self discharge
- Compact connector providing polarity safe battery connection
- Built-in protection and monitoring circuit
- Battery protected against operation at excessive temperatures
- Deep discharge protection
- Overcharge protection included
- Designed for use in emergency lighting applications including luminaires compliant with IEC 60598-2-22.

Mechanical Construction

- The battery pack is enclosed in flame-retardant PVC heat-shrink tubing, without a rigid outer casing.
- This packaging method is selected for its compactness and weight advantage in constrained luminaire designs.
- Important: Due to the absence of a rigid plastic enclosure, proper mechanical protection must be ensured during installation. The battery should not be exposed to direct mechanical force, piercing, or compression. Suitable mounting supports, shock absorption, and secure positioning are required.
- The battery is not intended to be used in luminaires that require enclosure-integrated fire-resistant casing, or where the battery is directly exposed to impact, vibration, or heat sources.

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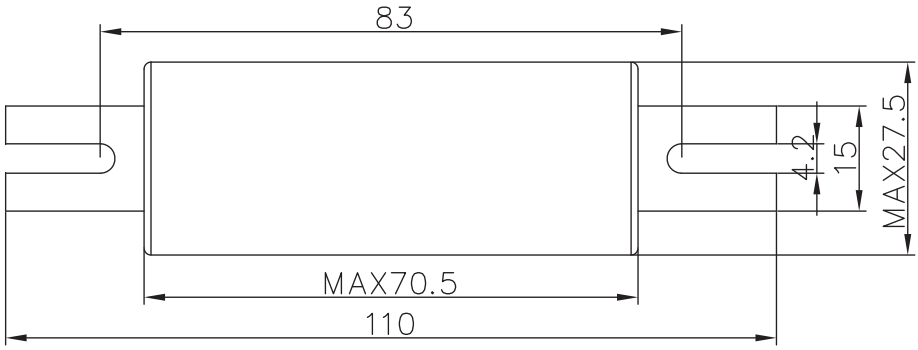
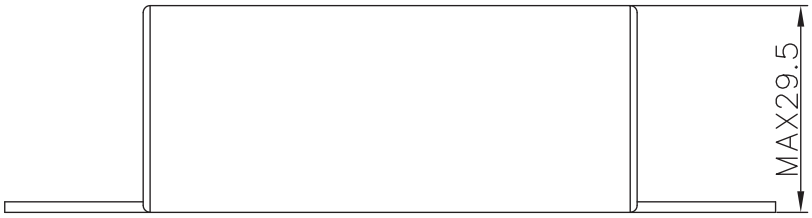
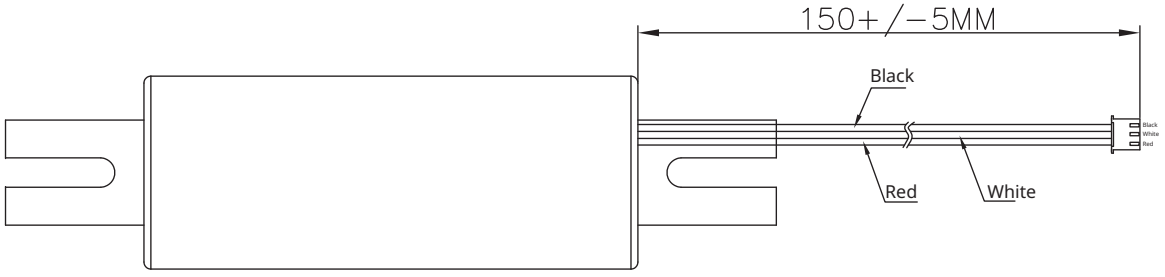
Specifications

Items	Specifications	Remark
Nominal Capacity	3400mAh	0.2C Standard discharge
Minimum Capacity	3315mAh	
Nominal Voltage	3.2V	
Charge Voltage	3.65V±0.03V	By standard charge method
Standard charging method	0.2C constant current,3.65V constant voltage charge to 3.65V,continue charging till current decline to ⩽ 0.01C	
Charge current	0.2C, 680mA	Standard charge time: 6h(Ref)
	0.5C,1700mA	Rapid charge time about: 3h(Ref)
Standard discharging method	0.2C constant current discharge to 2.0V	
Impedance	⩽100mΩ	Resistance measured at AC1KHZ after 50% charge
Maximum charge current	1C, 3400mA	For continuous charging mod
Maximum discharge current	1C, 3400mA	For continuous discharge mod
Charge Operation Temperature	5~55℃	Charge at a very low temperature such as blew 0℃,will be get a lower capacity and reduce cycle life of the battery
Discharge Operation Temperature	0~60℃	
Charge/Discharge humidity Range	60±25%R.H.	
Storage temperature for a long time	-20~25℃, 60±25%R.H.	Must charge the battery which with protect circuit when storage for three months.
NTC	10K NTC ±1%B=3435	

Technical Drawing







Battery Pack Usage, Maintenance & Safety

⚠ * Important Note

The following sections provide detailed technical instructions and safety guidelines for the BPC87 battery pack. It is crucial for safe, reliable, and compliant use. Topics include:

1. **Safety Warning Statement**
2. **Installation Instructions** – Proper mounting, polarity, and wiring.
3. **Battery Usage Guidelines** – Charging/discharging limits and operating conditions.
4. **Maintenance & Storage** – Periodic care and correct storage environments.
5. **Built-in Protection Features** – BMS-triggered thresholds and system safeguards.
6. **Safety Instructions** – Hazards to avoid and safe handling practices.
7. **Disposal & Environmental Responsibility** – Recycling protocols and end-of-life care.
8. **Disclaimer & Warranty** – Scope of coverage and limitations.
9. **Certifications & Compliance** – Standards, testing protocols, and declarations.

* You may use the section headers above to locate relevant topics.

We strongly recommend reviewing all content carefully to ensure full understanding and responsible use.

1. Safety Warning Statement

The battery pack is classified as dangerous goods and must be handled with care.

Please observe the following safety warnings:

- Only trained and qualified personnel may operate or maintain the battery.
- Any operation outside the specified charge, discharge, storage, mounting or temperature limits may result in fire, explosion, leakage, electric shock or chemical hazard.
- Use the battery for the specified purpose only.
- Unauthorized disassembly, opening, servicing or modification is strictly prohibited.
- Do not remove the product label.
- Stop using the battery immediately if it emits odor, smoke, abnormal heat, leakage or swelling.
- If electrolyte contacts skin or eyes, flush with clean water and seek medical assistance.
- Always use appropriate tools and protective equipment.
- Hytronik assumes no responsibility for consequences caused by improper use.

2. Installation Requirements

2.1 Before First Use

- Perform visual inspection. The cell should show no rust, leakage, stains or other defects affecting product value or safety.
- Verify terminal polarity and output voltage before connection.
- If terminals are dirty or oxidized, clean using a dry cloth only.
- Do not use the battery if it is damaged, deformed, swollen or mechanically abused.

2.2 General Conditions

- Keep away from heat sources, open flames, direct sunlight, water, saltwater or any other liquid.
- Do not expose to temperatures above 60°C.
- Installation area should be clean, dry, ventilated and free from metal debris or conductive contamination.
- Do not transport or store the battery together with metallic items that could cause short circuit.
- Prohibit serial or parallel battery connection.

2.3 Mounting

- The pack uses PVC sleeve construction rather than a rigid plastic housing; provide suitable mechanical protection inside the luminaire or equipment.
- Do not compress, puncture, deform, drop, strike or step on the battery.
- Use brackets, insulating supports or shock-absorbing materials to secure the battery and avoid direct force on the cell, PCM or wires.
- Avoid mounting directly against heat-generating components.

2.4 Wiring and Terminals

- Wire polarity: Red = Positive (+); Black = Negative (-); White = NTC.
- Do not short-circuit the positive and negative terminals with wires or metallic objects.
- Do not weld, solder directly to, or modify battery pack terminals.
- Do not use conductive or electrostatic tools during wiring.

3. Battery Usage Guidelines

3.1 Charging Guidelines

- Only use chargers specifically designed for LiFePO4 chemistry and compatible with 3.65V ± 0.03V nominal voltage.
- The charger must be connected in the following sequence: Connect the charger to the battery first, then plug into the power outlet.
- Disconnect the charger immediately after charging is complete.
- After use, recharge the battery within 12 hours to prevent performance degradation.
- For initial activation or after long-term storage, perform 2–3 full charge/discharge cycles to restore capacity.
- Reverse polarity during charging is strictly prohibited and will destroy the internal PCB.

3.2 Discharging Guidelines

- Do not reverse polarity during discharging.
- Ensure the battery pack is connected to a matching load to prevent short circuit or overheating.

* For specific charging & discharging data, please refer to the Technical Specifications table above.

4. Maintenance & Storage

4.1 Routine Maintenance

- Long-term storage voltage should be maintained at 3.2-3.3V.
- Recharge the battery within 12 hours after use.
- If unused, perform charge/discharge cycles every 3 months.
- Do not allow the battery to remain in a low-voltage state for extended periods
- Replace the battery when capacity falls below 80% of the nominal rating.
- Do not attempt repair or modification of protection circuits.

4.2 Storage Conditions

Items	Environment	Storage time
Storage temperature	45℃～50℃，non-condensing	< 1 month
	25℃～45℃，non-condensing	< 3 months
	-20℃～25℃，non-condensing	< 12 months
	20℃～25℃，non-condensing	Long term

- Avoid mechanical shock, stacking, or storing in confined/humid spaces.
- Batteries must not be stored upside down or horizontally.

5. Built-in Protection Features

The pack includes a PCM with overcharge, overdischarge, overcurrent, short-circuit recovery and low static consumption characteristics.

The following parameters reflect BMS-only test data at 25°C and do not constitute guaranteed values of the entire battery pack. Final battery performance is subject to actual shipment inspection.

Items	Description	Parameter
Overcharge Protection	Overcharge Protection Voltage	3.90±0.05V
	Overcharge Recovery Voltage	3.75±0.05V
Over-discharge protection	Over-discharge Protection Voltage	2.10±0.05V
	Over-discharge Recovery Voltage	2.30±0.05V
Over current protection	Overcurrent Protection Current	4.75±2.0V
Short protection	Short-circuit Protection Recovery Condition	Disconnect the load
Internal Resistance	Main loop electrify resistance	R≤60mΩ
Current consumption	Current consume in normal operation	< 10μA

6. Safety Warnings

- Do not immerse battery in water.
- Do not strike, drop, step on, puncture, or deform battery.
- Never weld or modify battery pack or terminals.
- Do not operate in strong static or magnetic fields.
- Never use or charge batteries outside of recommended temperature ranges.
- Dispose of leaking, deformed, or damaged batteries immediately.
- Do not use the battery if it emits odor, heat, or shows swelling.
- In case of fire, only use Li-ion certified extinguisher or dry sand.
- If electrolyte contacts skin or eyes, flush with water and seek medical help.

7. Disposal & Environmental Responsibility

- End-of-life batteries must be disposed of via certified recycling agencies.
- Do not dispose of batteries in household waste.
- Cover terminals with insulating material before disposal.
- Follow all local and international regulations for lithium-ion battery disposal.

8. Disclaimer & Warranty

- Hytronik provides a 2-year limited warranty for material and workmanship under normal operating conditions.
- The warranty does not cover damage resulting from:
- Improper use, handling, or installation
- Mechanical abuse or exposure to fire, water, or corrosive environments
- Charging or discharging outside recommended parameters
- Storage without maintenance for over 3 months
- Unauthorized disassembly or modification
- Force majeure (e.g. earthquake, lightning, flood)

9. Certification & Compliance

- Compliant with IEC 60598-2-22 emergency lighting requirements
- Cell performance in accordance with IEC 62133
- RoHS / REACH Compliant
- Designed to meet UN38.3 transport requirements