

12V 50AH LiFePO4 Battery

User Manual



ADVANCED
LITHIUM
TECHNOLOGY



SAFER
LONGER
LIFE



CLEAN
POWER
SOLUTION



Key Specifications

12.8V 50Ah LiFePO4 Battery



SPECIFICATION OVERVIEW

Engineered for performance, reliability, and longevity, the Sunpal 12.8V 50Ah LiFePO4 battery delivers stable power in a compact and durable design.



Voltage
12.8V



Capacity
50Ah (640Wh)



Max Charge Current
30A



Continuous Discharge
30A



Peak Discharge (10s)
60A



Cycle Life
6000+ cycles



Weight
~5.5 kg



Dimensions
210 × 227 × 138 mm



IP Rating
IP65



Operating Temperature
Charge 0–55°C /
Discharge -20–60°C



IP65
Waterproof
Protection

Built to withstand harsh environments with dust-tight and water-resistant protection.



6000+
Cycle Life

Exceptional longevity with over 6000 cycles for long-term, reliable performance.



Lightweight
~5.5kg Design

Optimized for easy handling and installation without compromising power.



Compact
Energy Storage
System

Space-saving design delivers high energy density for versatile power applications.

Safety Instructions



Do Not Short Circuit

Do not connect the positive and negative terminals directly.



Do Not Reverse Polarity

Do not connect with reversed polarity.



Do Not Disassemble

Do not disassemble, modify or attempt to repair the battery.



Keep Away From Fire

Keep the battery away from fire, heat sources and high temperatures.



Use LiFePO4 Charger Only

Use a charger specifically designed for LiFePO4 batteries only.



Keep Dry

Do not expose the battery to water, rain or moisture.



- **Inspect Before Use:** Inspect the battery for any damage or abnormality before use. Do not use if the battery is damaged, leaking or deformed.
- **Keep Terminals Protected:** Always keep the terminals clean and protected. Avoid contact with conductive materials.
- **Keep Away From Children:** Keep the battery out of reach of children.
- **Stop Use If Abnormal:** Stop using the battery immediately if it becomes damaged, overheated, emits odor, or shows any abnormal behavior.

Installation Guide

1. BATTERY TERMINALS

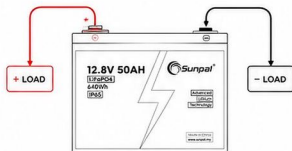
Identify the positive (+) and negative (-) terminals before installation.



2. CONNECTION EXAMPLES

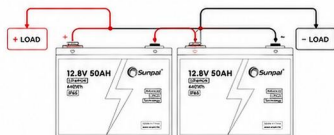
2.1 Single Battery Connection

Connect to load or device.



2.2 Multiple Batteries (Parallel Connection)

Connect all positive terminals together and all negative terminals together.



3. FUSE RECOMMENDATION



Install a fuse on the positive (+) cable as close to the battery as possible.

Recommended Fuse Rating

60A

Type: DC Fuse | Voltage: $\geq 100V$ DC

4. VENTILATION



Install the battery in a well-ventilated area. Do not enclose the battery in an airtight compartment.



Allow at least 50mm clearance around the battery for proper airflow and heat dissipation.

5. TIGHTENING TORQUE



Ensure terminal bolts are securely tightened to the recommended torque.

Recommended Torque 8 ± 1 N·m

Bolt Size **M6**

6. INSTALLATION STEPS



1

Inspect the battery for any damage.



2

Place the battery on a clean, flat, and stable surface.



3

Ensure the environment temperature is within $0^{\circ}C$ to $45^{\circ}C$.



4

Connect the positive (+) cable first, then the negative (-) cable.



5

Verify all connections are secure and properly tightened.

Charging Guide

Follow these recommended charging parameters to ensure optimal battery performance, safety, and long service life.



RECOMMENDED CHARGING VOLTAGE

14.4V \pm 0.2V



FLOAT VOLTAGE

13.6V \pm 0.2V



MAX CHARGE CURRENT

30A



CHARGING TEMPERATURE

0°C to 55°C



CHARGER COMPATIBILITY

LiFePO4 charger only



CHARGING PRECAUTIONS



USE THE CORRECT CHARGER

Always use a LiFePO4-compatible charger with the recommended charging voltage.



MONITOR DURING CHARGING

If the battery becomes abnormally hot, smokes, or shows any unusual behavior, stop charging immediately and disconnect the charger.



CHARGE WITHIN SPECIFIED TEMPERATURE RANGE

Charge the battery within 0°C to 55°C to ensure safety and optimal performance.



Series & Parallel Connections

2S Connection

25.6V nominal



4S Connection

51.2V nominal



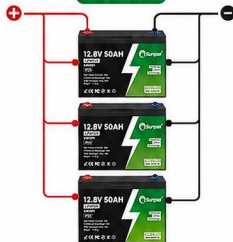
2P Connection

100Ah



4P Connection

200Ah



4S4P Connection (Example)

51.2V, 200Ah



Use same model batteries only



Charge batteries before connection



Use equal cable lengths

Applications & Storage

Sunpal LiFePO₄ batteries are engineered for a wide range of applications, delivering reliable power, long cycle life, and outstanding safety in every environment.



APPLICATIONS



SOLAR ENERGY STORAGE



RV / CAMPERVAN



MARINE



UPS BACKUP



OFF-GRID SYSTEMS



TROLLING MOTORS

STORAGE GUIDANCE



Store at
40–60%

Store the battery at 40–60% state of charge for optimal longevity.



Recharge every
3–6 months

Recharge the battery every 3–6 months to maintain performance.



Keep
dry

Store in a dry environment and avoid moisture.



Avoid
direct
sunlight

Keep away from direct sunlight and high temperatures.

Warranty & Contact



Thank you for choosing Sunpal.
We are committed to providing premium
LiFePO4 batteries engineered for
performance, reliability, and long-term value.



5-Year Warranty

Sunpal warrants this product to be free
from defects in materials and workmanship
for a period of 5 years from the date of
purchase.



WARRANTY EXCLUSIONS

- ⊗ Damage caused by improper installation, misuse, or unauthorized modification.
- ⊗ Use in applications other than for which the product is designed.
- ⊗ Damage due to natural disasters, fire, flood, or abnormal environmental conditions.
- ⊗ Normal wear and tear or cosmetic damage that does not affect performance.

SERIAL NUMBER

SN: _____



Scan to Register Warranty

Scan the QR code to register your product and activate your 5-year warranty.

We're Here to Help

Website: www.sunpal.my

Email: hello@sunpal.my

Phone: 016-800-8400



Premium Support. Always with You.

Our dedicated support team is ready to assist you with any questions or concerns. Your satisfaction and peace of mind are our top priorities.

