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EarthX ETX18B

EarthX ETX18B Lithium Iron Phosphate Battery User Manual

Model: ETX18B

1. INTRODUCTION

This manual provides essential instructions for the safe and effective use of your EarthX ETX18B Lithium Iron Phosphate (LiFePo4) battery. The ETX18B is designed for motorcycle and powersport applications, featuring an exclusive integrated Battery Management System (BMS) for enhanced performance and longevity. Please read this manual thoroughly before installation and operation.

2. PRODUCT OVERVIEW

The EarthX ETX18B is a high-performance lithium iron phosphate battery known for its lightweight design and advanced technology. It is significantly lighter than traditional lead-acid batteries and incorporates a sophisticated Battery Management System (BMS) to protect the cells from various electrical conditions, ensuring reliable operation and extended lifespan.



Figure 2.1: Front view of the EarthX ETX18B Lithium Iron Phosphate battery, showing the EarthX logo and "Lithium Battery" text.

Key features include:

- Extremely lightweight, approximately 70%-80% lighter than comparable lead-acid batteries.
- Contains no acid or lead, preventing sulfation, corrosion, freezing, or boiling over.
- Offers 2-3 times faster charging compared to lead-acid batteries.
- Provides a significantly longer lifespan than traditional lead-acid batteries.
- Integrated Battery Management System (BMS) for protection against over-discharge, over-charge, short circuits, and for cell balancing.

3. SETUP AND INSTALLATION

The ETX18B battery comes with foam shims and terminal adapters to facilitate proper fitment and connection in various powersport vehicles. Proper installation is crucial for optimal performance and safety.

3.1 Unpacking

Carefully remove the battery and all accessories from the packaging. Verify that the following items are present:

- EarthX ETX18B Lithium Iron Phosphate Battery
- Foam shims for secure fitment
- Terminal adapters

3.2 Installation Steps

1. **Preparation:** Ensure the vehicle's ignition is off and disconnect the negative terminal of the old battery first, followed by the positive terminal.
2. **Fitment:** Place the ETX18B battery into the battery compartment. Use the provided foam shims to ensure a snug and secure fit, preventing movement or vibration during operation.
3. **Connections:** Connect the positive (+) terminal of the ETX18B battery first, then connect the negative (-) terminal. Ensure all connections are tight and secure. Use the terminal adapters if necessary to achieve proper contact.
4. **Final Check:** Double-check all connections and ensure the battery is firmly seated.

Important: Always follow your vehicle manufacturer's specific instructions for battery installation if they differ from these general guidelines.

4. OPERATING INSTRUCTIONS

The EarthX ETX18B battery is designed for immediate use after proper installation. Its integrated Battery Management System (BMS) actively monitors and protects the battery during operation.

4.1 Battery Management System (BMS)

The advanced BMS within the ETX18B provides several critical protections:

- **Over-Discharge Protection:** Prevents the battery from being discharged below a safe voltage level, which can cause irreversible damage to lithium cells. If the voltage drops too low, the BMS will cut off power to protect the battery.
- **Over-Charge Protection:** Safeguards against excessive charging voltage, which can lead to overheating and reduced battery life.
- **Short Circuit Protection:** Automatically disconnects the battery in the event of a short circuit, preventing damage to the battery and potential hazards.
- **Cell Balancing:** Ensures that all individual cells within the battery pack maintain a balanced voltage, optimizing overall battery performance and longevity.

4.2 Charging

The ETX18B battery charges significantly faster than lead-acid batteries. It can be charged using most conventional battery chargers, provided they are compatible with lithium iron phosphate batteries and do not exceed the maximum charge voltage of 15V. The standard charge voltage range is 13.9V to 14.6V. Recommended charge current is 8A. If the battery has entered over-discharge protection mode, simply connect it to a charger to reactivate it.

5. MAINTENANCE

The EarthX ETX18B battery requires minimal maintenance due to its advanced design and integrated BMS.

- **No Fluid Checks:** Unlike lead-acid batteries, the ETX18B contains no liquid electrolyte, eliminating the need for fluid level checks.
- **Corrosion-Free Terminals:** The battery will not sulfate or corrode, reducing the need for terminal cleaning. However, ensure connections remain tight and free of debris.
- **Storage:** For long-term storage, ensure the battery is adequately charged. The self-discharge rate is less than 3% per month at 25 °C. The battery can be stored in temperatures ranging from -40 °C to +70 °C.
- **Environmental Protection:** The battery has an IP56 environmental rating, indicating protection against dust ingress and high-pressure water jets from any direction.

6. TROUBLESHOOTING

If you experience issues with your EarthX ETX18B battery, consider the following common troubleshooting steps:

- **Battery Not Cranking / Weak Cranking:**
 - Check battery terminals for tightness and corrosion. Loose or dirty connections can impede current flow.
 - Verify the battery voltage. If it's below the nominal voltage (13.2V), the battery may be discharged or in over-discharge protection mode.
 - Charge the battery using a compatible lithium charger. The integrated BMS will reactivate the battery if it was in protection mode.
 - Ensure your vehicle's charging system is functioning correctly. A faulty stator or regulator can prevent the battery from charging.
- **Battery Not Holding a Charge:**
 - Confirm that the charging system of your vehicle is operating within the specified voltage range (13.9V -

14.6V).

- Check for parasitic drains on your vehicle's electrical system when the ignition is off. Even small continuous draws can deplete a battery over time.
- If the battery is old, its capacity may have diminished. Refer to the lifespan specifications.

- **Battery Overheating:**

- Immediately disconnect the battery if it feels excessively hot.
- This could indicate an internal fault or an issue with the charging system. Seek professional assistance.

If these steps do not resolve the issue, contact EarthX customer support for further assistance.

7. SPECIFICATIONS

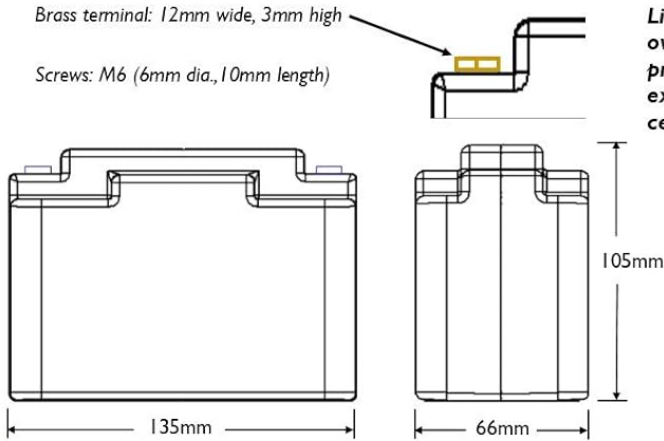
The following table details the technical specifications for the EarthX ETX18B Lithium Iron Phosphate battery.



ETX Series Lithium Batteries

ETX18B

DIMENSIONS



Lightweight LiFePO4 battery with exclusive over discharge protection, over charge protection, short circuit protection, excessive cranking protection and built in cell balancing technology.

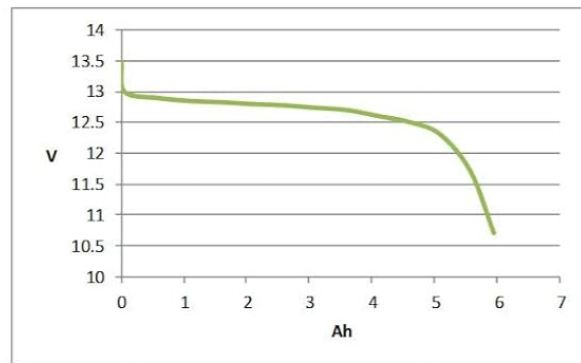


SPECIFICATIONS

Specifications	
Voltage	13.2V
Capacity	6.2Ah @ 1C Rate (See chart)
Capacity vs Temperature	25 °C = 100% 0 °C = 92% -30 °C = 80%
Self-Discharge Rate	< 3% / month @ 25 °C
Pulse Crank Amps (PCA)	340A (3 sec @ 25 °C, voltage >9V)
Cold Crank Amps (CCA)	230A (modified SAE test, 3 sec @ 0 °F, volts >7.2V)
Continuous Discharge Amps	60A
Standard Charge Voltage	13.9 - 14.6 V
Maximum Charge Voltage	15V
Recommended Charge Amps	.8 - 8A
Max Charge Amps	30A (from vehicle charging system)
Life (Charge cycles, 80% depth of discharge)	4000 cycles @ 1C discharge rate, 25 °C 2000 cycles @ 10C discharge rate, 25 °C
Life (Years)	8 Years
Weight	2.2 lb. (1 Kg)
Dimensions	5.3 in (L) x 2.6 in (W) x 4.1 in (H) 135mm(L) x 66mm (W) x 105mm (H)
Environmental Rating (resistance to water intrusion)	IP 66 (wash down with a high pressure washer)
Operating Temperature	-30 °C to +60 °C
Storage Temperature	-40 °C to +70 °C

Discharge Characteristics

Discharge Ah (25DegC)



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Figure 7.1: Detailed specification sheet for the ETX18B battery, including dimensions and discharge characteristics graph.

Feature	Specification
Model	ETX18B
Voltage	13.2V
Capacity	6.24Ah @ 1C Rate
Pulse Crank Amps (PCA)	140A (3s @ 25 °C, voltage >9V)
Cold Crank Amps (CCA)	230A (modified SAE test, 3 sec @ 0 °F, volts >7.2V)
Continuous Discharge Amps	90A

Feature	Specification
Standard Charge Voltage	13.9V - 14.6V
Maximum Charge Voltage	15V
Recommended Charge Amps	8A
Max Charge Amps (Vehicle System)	30A
Life (Charge cycles, 80% DoD)	4000 cycles @ 1C discharge rate, 25 °C
Life (Years)	8 Years
Weight	2.2 lb (1 Kg)
Dimensions (L x W x H)	5.3" x 2.6" x 4.1" (135mm x 66mm x 105mm)
Environmental Rating	IP56 (resistance to water intrusion)
Operating Temperature	-30 °C to +60 °C
Storage Temperature	-40 °C to +70 °C

8. WARRANTY AND SUPPORT

Specific warranty details for the EarthX ETX18B battery are not provided within this document. For comprehensive warranty information, please refer to the official EarthX website or contact their customer support directly.

For technical support, product inquiries, or warranty claims, please contact EarthX using the following information:

- **Website:** www.earthxbatteries.com
- **Phone:** 970-674-8884