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axl Everfly

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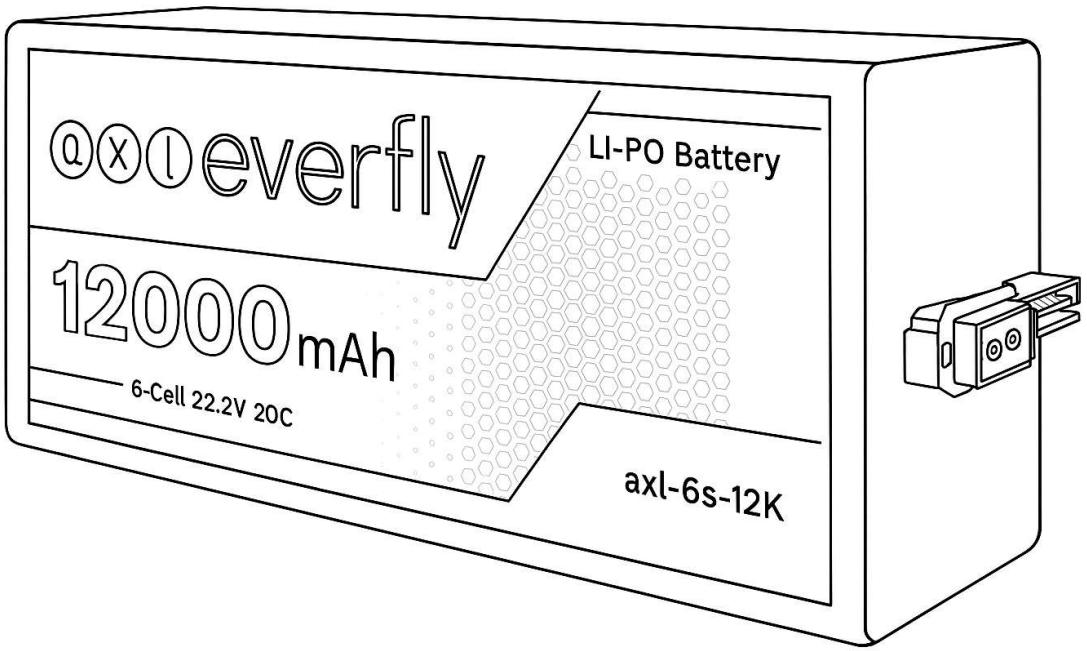

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Introduction

axl everfly 12000mAh 6S LiPo battery is engineered to meet the demands of high-performance drones, advanced RC vehicles, and Robotics. Combining high voltage output, substantial current capacity, and a lightweight form factor, this battery is designed to deliver reliable, consistent power while maintaining optimal efficiency and maneuverability for demanding applications.

Understanding the operational characteristics, charging procedures, and maintenance requirements of the axl everfly battery is critical to maximizing performance, ensuring safety, and extending its lifespan. Improper handling or charging can compromise efficiency, reduce longevity, and create safety risks.

This guide will walk you through everything a beginner needs to know.

What Exactly Is a 6S LiPo Battery?

“6S” Means Six Cells in Series: A 6S LiPo battery consists of six individual cells connected end-to-end (in series) within a single battery package. Each cell contributes to the total voltage of the battery.

Voltage Overview: Each LiPo cell has a nominal voltage of approximately 3.7 volts (V). When six cells are connected in series, the voltages add together, producing a nominal voltage of 22.2 V (6 × 3.7 V).

Why Higher Voltage Matters: Higher voltage allows the battery to deliver more power to motors, enabling faster acceleration, higher top speeds, and improved overall performance in drones and RC vehicles. Compared to lower-voltage configurations, such as 3S or 4S batteries, a 6S LiPo battery provides a significant boost in energy delivery and efficiency.

Understanding the Voltage

A 6S LiPo doesn't stay at 22.2 V. Its voltage changes as you charge and use it. Knowing these numbers is key:

- Fully Charged: 25.2 V (Each cell is at 4.2 V) - This is 100% full.
- Nominal Voltage: 22.2 V (Each cell is at 3.7 V) - This is the midpoint, often used for labeling.
- Storage Voltage: 22.8 V (Each cell is around 3.8 V) - The safest voltage for storing your battery when not in use for more than a day or two.
- Danger Zone / Minimum Safe Voltage: This is the lowest voltage you should let your battery reach per cell. Crucially, this value varies between manufacturers and battery types. While 3.0 V used to be a common guideline, many manufacturers now recommend not going below 3.5V per cell (6s lipo battery with total 21v), or sometimes even higher. Letting cells drop below the manufacturer's recommended minimum can cause irreversible damage and reduce battery life. Always check the instructions or datasheets that come with your specific battery for its minimum safe discharge voltage. Most drones and Electronic Speed Controllers (ESCs) have a low-voltage cutoff (LVC) feature you should set according to your battery manufacturer's recommendation.

Key Tip: Good chargers show the voltage of each individual cell. They should all be very close (within 0.05 V) when charged or discharged. This is called "balancing."

Applications of 6S LiPo Batteries

The high voltage and power density of a 6S LiPo battery make it well-suited for a variety of high-performance RC and UAV applications, including:

- Larger Drones: Ideal for cine Shoots, 5–7-inch freestyle quads, and professional aerial photography platforms that demand extended flight performance and higher thrust.
- High-Performance RC Cars and Trucks: Particularly suitable for 1/8th scale buggies and monster trucks, where high voltage provides increased speed, torque, and acceleration.
- RC Boats: Higher voltage allows for faster propeller speeds, improving overall performance on water.
- Electric Ducted Fan (EDF) Jets: These models require substantial continuous power, making 6S LiPo batteries an optimal choice for sustained high-output operation.

Charging Your 6S LiPo axl everfly Battery: Critical Safety Guidelines

Warning: Improper charging is the leading cause of LiPo battery incidents. Adhering to safe charging procedures is essential for both personal safety and battery longevity.

Selecting the Correct Charger

Use a balance charger specifically designed for LiPo batteries and rated for at least 6 cells (6S).

Choose reputable brands to ensure reliability and safety. Avoid low-quality or unverified chargers.

Verify that your charger's power supply (AC adapter or DC source) can provide sufficient wattage for your desired charge rate:(Volts × Amps = Watts).

Smart Chargers: Modern chargers (e.g., Gens Ace iMars D1000 with G-Tech) can detect battery type (LiPo, LiHV, LiFe, NiMH) and set appropriate charging parameters. Despite automation, understanding basic charging principles and verifying settings remains essential.

Safe Charging Procedure

Follow these steps every time to ensure safe operation:

1. Cool Down First: Allow the battery to reach ambient temperature before charging. Charging a hot battery can increase risk and degrade lifespan.
2. Safe Location: Charge on a fire-resistant surface (concrete or metal), away from flammable materials such as paper, curtains, or wood.
3. Use a LiPo Bag or Box: Always place the battery in a fire-resistant charging bag or ammo box during charging.
4. Connect Balance Lead First: Insert the small balance connector into the correct 6S port on your charger before connecting the main power lead.
5. Connect Main Power Lead: Connect the main battery connector (XT60) to the charger.
    - Configure Charger Settings (Manual Mode):
    - Select LiPo battery type.
    - Choose Balance Charge mode to ensure all six cells charge evenly.
    - Set Cell Count to 6S.
    - Set Charge Current (Amps): Use 0.5C for optimal battery life (e.g., 3 A for a 6000 mAh battery).

Start Charging & Supervise: Begin the charging cycle. Never leave a LiPo battery unattended. Monitor periodically; the battery should only become slightly warm. If it becomes hot or begins puffing, immediately stop charging.

Completion: When the charger signals the end of the cycle, disconnect the main lead first, followed by the balance lead.

Connecting Type & Accessories

The axl Everfly 6S LiPo battery comes with standard connectors to ensure safe and reliable operation with compatible systems.

Included Accessories:

1. **Power Cable**

Type: XT60 Female → XT60 Female
Wire Gauge: 10 AWG
Length: ≅140 mm
Purpose: Supplies high-current power from the battery to your power distribution board.

2. **Balance Cable**

Type: JST-XH Female → JST-XH Female
Purpose: Monitors and balances the voltage of individual cells during charging to ensure safe and uniform charge cycles.
Length: ≅140 mm

User Notes:

- Always connect the balance cable first when charging.
- Connect the main power cable only after the balance lead is securely attached.
- Inspect connectors regularly for damage, dirt, or corrosion before each use.

Storage and Handling of axl everfly 6S LiPo Battery

Storage Charge: If you won't use your 6s LiPo battery for more than 2-3 days, use your charger's "Storage" function. This brings each cell to ~3.8-3.85V (totally 22.8~ 23.1V), the ideal voltage for long-term health. **Never store LiPos fully charged or fully empty!**

Storage Location: Store batteries in a cool, dry place (around room temperature is fine). Keep them inside a LiPo bag or ammo box, away from flammable materials.

Inspect Regularly: Before and after each use, check for:

- Puffing/Swelling: Any puffiness means the battery is damaged. Retire it safely.
- Physical Damage: Dents, deep scratches, torn wrapping, damaged wires/connectors.
- Heat: Excessive heat after use can indicate a problem or that the battery is working too hard (C-rating might be too low).

Handling: Don't drop them. Never let loose metal objects touch the connectors (risk of short circuit!).

Spotting and Dealing with Damage

Swelling/Puffing: If the battery swells up (puffs), it's internally damaged, likely due to over-discharge, over-charging, overheating, or physical impact. Do NOT attempt to charge or use a puffed LiPo. It's a fire hazard.

Over-Discharge: If you accidentally run a battery below the manufacturer's recommended minimum voltage per cell (e.g., below 3.5 V), it might be permanently damaged. It may not hold a full charge, have reduced capacity, or be unsafe to use. Some chargers might refuse to charge a severely over-discharged pack.

Disposal: Damaged or dead LiPos need careful disposal.

1. Discharge them FULLY (using your charger's discharge function to 0V, or a carefully researched resistive load like a lightbulb rig).
2. Submerge them in saltwater for several days to ensure they are inert (optional but recommended by some).
3. Take them to a battery recycling center or hazardous waste facility. Do NOT put them in regular trash.

How Long Should My 6S LiPo Battery Last?

Cycle Life: A well-cared-for LiPo might last anywhere from 150 to 300+ charge/discharge cycles. Some premium packs might do better, but real-world results vary greatly.

Factors Affecting Lifespan:

- Heat: Avoiding excessive heat during use, charging, and storage is key. Never charge a hot battery.
- Over-Discharge: Repeatedly running below the recommended minimum voltage/cell shortens life significantly.
- Storage: Storing fully charged, or empty degrades them faster. Always use storage voltage!
- Charge Rate: Consistently charging above 1C (or the manufacturer's recommendation) can reduce lifespan. Sticking to 0.5C is generally best for longevity.
- Physical Damage: Impacts shorten life.

Visit Our website

Feel free to connect

Kakkanad, Ernakulam,
Kerala, India – 682030
P : +91 484 299 3399,
+91 949 771 7654
E : info@axldrone.com

C5 UL Cyber Park,
Special Economic Zone
Calicut, India – 673016
P : +91 9645 426 414
E : info@axldrone.com

1441 Broadway,
#5, New York, NY 10018
P : +(646) 260-6311
E : info@axldrone.com