Drone Batteries

EFFICIENT AND SAFE POWER FOR YOUR UNMANNED SYSTEMS

Understanding drone batteries is essential to maximise flight time, performance and reliability. The choice of battery has a huge impact on both range and function, whether the drone is flying far or high, travelling over rough terrain or operating below sea level. At Celltech, we offer both standard and customised battery solutions tailored to different drone technologies and their unique needs.

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BATTERIES FOR UAV, UGV AND UUV

Celltech supplies high-quality batteries for all types of drones - in the air, on the ground and underwater. With our own production facilities in Germany, England, Finland, Bulgaria and China, as well as local presence throughout the Nordics and Central Europe, we ensure both flexibility and fast delivery. We work with leading battery manufacturers globally and are not tied to one supplier, which means we can always find the best solution for the specific need.

We offer:

- Standard and customised battery packs adapted to drone design and requirements
- A wide range of battery chemistries and characteristics - from high energy density to robust safety design
- Batteries with long life, low weight and high reliability, even under variable loads and extreme conditions
- Special focus on safety and electronics protection in demanding applications

TYPES OF DRONE BATTERIES

Different battery types offer varying advantages in energy density, weight, safety and cost. Here is an overview of the most commonly used technologies:

Lithium-polymer (LiPo)

- Lightweight
- High power
- Flexible

However, they require careful handling due to the risk of overcharging and heat build-up.

Lithium-ion (Li-ion)

- Long lifespan
- Great stability
- High capacity

The downside is typically a higher weight.

Fuel cells

- Long flight time
- High payload capacity

Lithium Iron Phosphate (LiFePO4)

- High safety
- Long life
- High capacity
- Reliable

Ideal for industrial or demanding environments where reliability is more important than low weight.

Nickel-metal hydride (NiMH)

- Stable
- Economic

The downside is lower energy density than lithium-based alternatives.

BATTERY REQUIREMENTS FOR DIFFERENT DRONE TYPES

Drones today span far wider than just flying devices. Therefore, each type of drone has different requirements for battery design and performance:

Airborne drones (UAV)

Includes everything from multi-rotor drones to fixed-wing and VTOL models. These drones are used for photography, surveying, search, inspection, and electric flight. They require lightweight batteries with high energy density and fast discharge capabilities.

Unmanned Ground Vehicles (UGV)

E.g. autonomous transport robots, inspection drones and military land-based systems. The focus here is on robustness, shock resistance and long runtime - batteries must be able to withstand vibrations and uneven terrain.

Underwater UAVs (UUVs)

Used for inspection, research and military purposes below sea level. They require dense, corrosion-resistant batteries with long discharge times and high reliability in harsh environments.

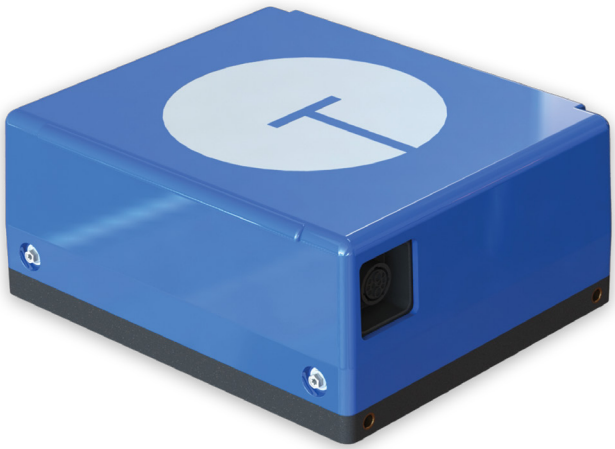
Celltech provides battery solutions for all three drone categories - always adapted to the technical and environmental requirements they operate under.

CAPACITY AND FLIGHT TIME

Battery capacity - measured in mAh or Ah - determines how long a drone can operate. High capacity gives longer operating time, but also increases weight. The right balance between weight, capacity and power consumption is crucial, and here we offer advice based on experience with both UAV, UGV and UUV systems.

SAFETY AND MAINTENANCE

Especially when using LiPo and Li-ion batteries, proper handling is important to avoid overheating or failure. We recommend regular inspection for wear and proper storage. Celltech battery solutions can be delivered with integrated battery management systems (BMS) that ensure monitoring and balance for maximum safety.



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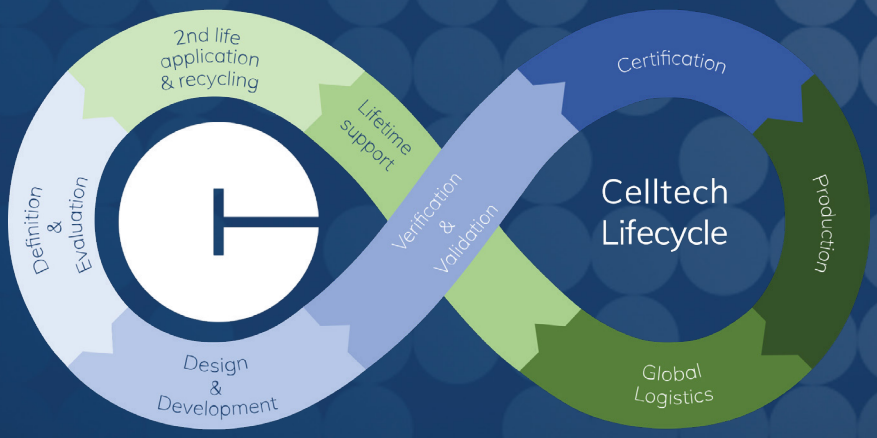
About Celltech Group

Celltech Group is a global battery supplier and manufacturer of leading battery solutions with operations in nine countries, five R&D and production facilities, and over four hundred employees. With the support of our extensive partner network, which has been created over the 40 years we have been in the battery business, we provide value-added, high-quality, and competitive Celltech Lifecycle solutions with efficient logistics.

Celltech Group merges innovation with reliability, offering battery solutions that meet the drone industry's evolving needs. Our dedication to quality, compliance, and customer satisfaction ensures we deliver products that power drones reliably, contributing to advancements in technology. Celltech - your battery partner for unmanned systems.



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