

# Technical Information Letter

## Affected Products

This information letter applies to all EarthX lithium batteries for experimental aircraft use.

## Purpose

This letter provides a simple flow chart to help determine the compatibility of a lithium battery in your aircraft.

## Background Information

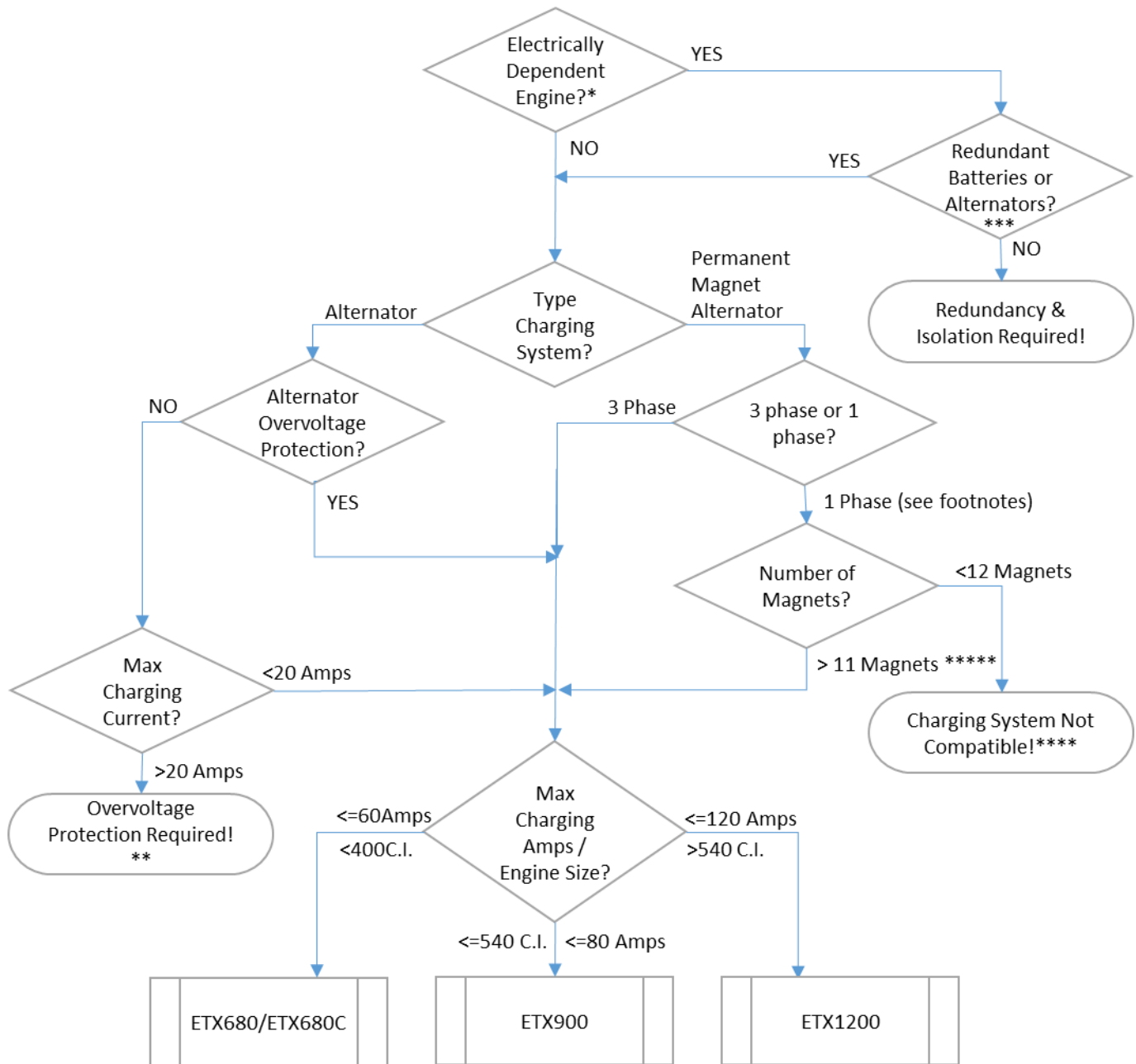
A lithium battery, having different properties than a lead acid battery, requires special consideration for its use to ensure longevity and safety. A lithium battery has a low resistance to charge current which is why a lithium battery can be recharged so quickly. But this low resistance also allows it to accept a charge current which may exceed its rating. A lithium battery is also more easily damaged due to over-voltage charging. As such, all EarthX batteries come with over-voltage (over-charging) protection. In addition to the battery's over-voltage protection, EarthX strongly recommends having automatic over-voltage circuit protection (crowbar) for the aircraft charging system. This is an important backup safety feature to protect the aircraft electrical system from high voltage events. In the case of high output alternator charging systems, aircraft automatic over-voltage protection is required.

## Recommendations

Review and understand the flow chart to determine if your aircraft is compatible with a lithium battery. If you have questions, please contact EarthX for more details at: 970 674-8884 or [sales@earthxbatteries.com](mailto:sales@earthxbatteries.com).

## Reference Information

The flow chart below shows the compatibility and safety features needed for an EarthX battery:



Battery fault must be monitored from the cockpit

\* Electronic ignition or fuel pump powered by main aircraft charging system and or battery

\*\* If voltage regulator fails, voltages could reach 100volts damaging aircraft electronics

\*\*\* Redundancy without the ability to isolate redundant components is NOT redundancy

\*\*\*\* Signal phase charging systems with <12 magnetic poles produces a poor DC charging current

\*\*\*\*\* Rotax 912/914/915/582 Provision 8 is acceptable