



HIGH-PERFORMANCE TRANSFORMERS AND INDUCTORS IN THE AEROSPACE INDUSTRY

Pilots the world over rely on the safety, reliability, and efficiency of high-performance transformers and inductors to do their jobs every day. Whether powering complex flight-management displays or helping navigators determine their location and altitude, electromagnetic technology is essential to flight success and safety.

Even simple key functions in an aircraft rely on electromagnetic technology; cabin lights, data recording and information storage, flight tracking, communication systems, and fuel control all depend on transformers and inductors.

From the nose of an aircraft to the tip of its tail, custom magnetics help power the following critical features:

- Autopilot systems
- Braking systems
- Guidance, orientation, and navigation
- In-flight screen systems and lighting
- Auto-throttle and throttle valve indicators
- Auxiliary power systems
- Fuel management
- Wing air flaps and rudder control



Custom High-Performance Transformer and Inductor Applications

Aviation and aerospace transformers offer technology to support more than just commercial jetliners; helicopters, rockets, space shuttles, and satellites also rely on precision magnetics for safe operation.

The use of heads up displays (HUDs) creates less strain for a pilot's eyes and offers more efficient operation, not only for military aviation, but also for commercial and professional crafts. The information collection and general operation of a HUD is driven by critical custom electromagnetic components.



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Navigation Systems

Electromagnetics also assist pilots in determining and monitoring location, altitude, flight paths, arrival times, and destinations. For instance:

- **Transformer rectifier units** — Operating through three-phase power sources in a range of sizes, these are used to support a wide variety of aircraft programs. The most popular models fall between 10 and 400 amps and are available with both unregulated and regulated unit assemblies. Their efficiencies can be as high as 88%.
- **Air core Inductors** — Inductors can be custom designed to maintain consistent performance and minimize any unwanted harmonics. The inductance linearity of these coils is not affected by changes in current. Agile's line of air core inductors are designed for VHF-UHF RF applications, easily suiting various military-level performance requirements.



- **Isolation power transformers** — These offer superior safety and efficiency, making them very useful in aerospace applications. These components are primarily used to protect end users as well as sensitive equipment from electric shock; the end-user circuit is isolated from the primary power circuit. Due to their specialized design and materials, these transformers typically maintain dielectric isolations between 2500VAC and 4000VAC and can be customized for even higher isolation requirements.

Communications Systems

Efficient, reliable communications systems are essential to in-flight operations, and much of this technology relies on three-phase transformers. Offering low costs, lightweight performance, compact size, and minimal assembly time, these custom transformers can be crafted to fit into almost any space.

These extremely high-power, high efficiency magnetics allow for easy transportation and installation. In combination with a custom electrical enclosure, three-phase transformers offer high performance for the most demanding applications — from aviation and aerospace to medical and telecommunications.



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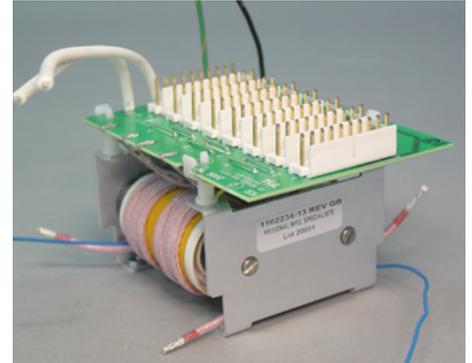


Custom Magnetics Solutions with Agile

The Agile Magnetics team is dedicated to finding the best solution for every project, no matter how complex or unusual. For over 23 years, our engineers have provided high-quality custom fabrication services from start to finish; we design, source, and manufacture electromagnetics to the most demanding specifications across all types of industries and can manufacture to UL, CUL, VDE, and CE standards.

In everything we do, we remain committed to superior innovation and reliability – key to success within the aerospace and aviation industries.

For more information on our work with aerospace-grade transformers and inductors or to discuss how we can help you with your next project, [contact us today](#).



To learn more about Agile Magnetics' capabilities,
download our eBook,

A Guide to High Frequency Transformers



Contact Us to Learn More

At Agile Magnetics, we offer complete custom design and manufacturing services for high frequency transformers, specifically specializing in applications requiring limited space and noise reduction. Working with the most advanced materials, our engineers can design a transformer to meet all of the requirements of your specific application. To learn more about our capabilities or to get a quote, please contact us today.

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24 Chenell Drive, Concord, NH 03301

www.agilemagco.com

Toll Free: 800-805-8991