



Aircore Mobility Motor and Controller

Powering everything that moves

Infinitum is pushing the boundaries of motor technology with a liquid-cooled, smarter air core motor design that can deliver premium performance for mobility applications. At a fraction of the weight of conventional motors, our Aircore Mobility motors dramatically improve efficiency and reliability while also offering high-speed, excellent torque, and a modular design. As a result, Aircore Mobility motors are well suited for drivetrain, traction, and auxiliary motor applications for Class 1-8 commercial vehicles as well as aerospace, marine, construction, and agricultural applications.



10% More efficient

50% Smaller and lighter

66% Less copper



Light and powerful

Aircore Mobility motors maximize power density by combining our PCB stator, which weighs 90 percent less than an iron core stator, with high-energy magnets.



Reliable and durable

By eliminating common points of failure associated with copper windings and insulation in traditional motors, our PCB stator has proven to be up to 9x more reliable in third-party testing.



High efficiency

Our air core design eliminates stator core losses while eddy current losses in the rotor and magnets are negligible, making our motors highly efficient over a wide range of load conditions.



Traction Motors

Aircore Mobility motors are designed for mobility applications including Class 1 to 8 commercial vehicles, aerospace and marine applications, and heavy machinery. Engineering teams can add power, from 50 to 250 kW, without significantly increasing the size and weight of the drivetrain. Using an axial flux design, Aircore Mobility motors generate more torque and faster rotation in a smaller package. With our modular disc design, engineers can build multi-stator, multi-rotor motors that offer high power and increased performance. Our innovative design also allows for a highly efficient oil-cooling system that cools the interior stator, helping increase power density by three to five times.

Auxiliary Motors

EVs require up to 50 small electric motors to power infotainment systems, heating and AC, window controls, and even the power steering. This means small, lightweight auxiliary motors are critical for maintaining the efficiency of the vehicle. By etching copper coils directly onto the PCB stator our Aircore Mobility motors eliminate the heavy iron core and copper windings used in conventional motors, cutting motor size and weight in half. This design also makes Aircore Mobility motors highly reliable and durable. And, by using air-cooling technology rather than noisy fans, Aircore Mobility motors keep noise low in today's ultra quiet EVs.

Aircore Mobility Motor Advantages



Rapid prototyping

Mobility engineers need technology that makes it easy to quickly iterate on designs and alter components based on rapidly changing needs. With the modular nature of our Aircore Mobility motors, engineers inherently have the flexibility to experiment and add stators and rotors quickly and easily to see what configuration will best suit their power and torque needs.



High speed

We engineered the Aircore Mobility motor specifically for high operating speeds, featuring magnet containment that is not in the way of magnetic flux, a coreless construction allowing for high-frequency operation without efficiency penalties caused by core losses, and a simple rotor construction to ensure stability at high speeds.



Modular axial design

With our modular axial design, mobility engineers can build multi-stator, multi-rotor motors that are slim and lightweight. This is possible because Aircore Mobility motors offer higher power and torque density.