Amphenol®

Application Note

IAN-151







Amphe-Lite HV Series

BACKGROUND

The growth of advanced air mobility (AAM) and electric vertical takeoff and landing (eVTOL) aircraft is increasing demand for reliable, high-voltage power distribution systems. Electrical connectors must support high-current power transfer while meeting strict size, weight, and mechanical performance requirements.

Connections between batteries, power distribution units (PDUs), and propulsion equipment must maintain electrical integrity under vibration, mechanical shock, and demanding operating conditions.

PROBLEM

Electric aircraft require compact, high-power connectors capable of maintaining secure electrical connections in dynamic environments. Continuous vibration, mechanical shock, and limited installation space create challenges for connector reliability and system integration.

Engineers must balance current capacity, voltage ratings, mechanical durability, and termination flexibility while minimizing connector size and weight.

AIO SOLUTION

Amphenol Industrial Operations developed the Amphe-Lite HV Series to address these challenges in eVTOL and advanced air mobility applications.

Rated for 120 A at 1,000 V DC, the series combines proven Amphe-Lite mechanical design with high-power contact technology. A robust metal shell and established mating mechanism provide secure engagement in vibration- and shock-prone environments.

Its compact construction and multiple termination options support flexible integration between battery systems, PDUs, and electric propulsion equipment, providing engineers with a durable, high-performance interconnect solution.