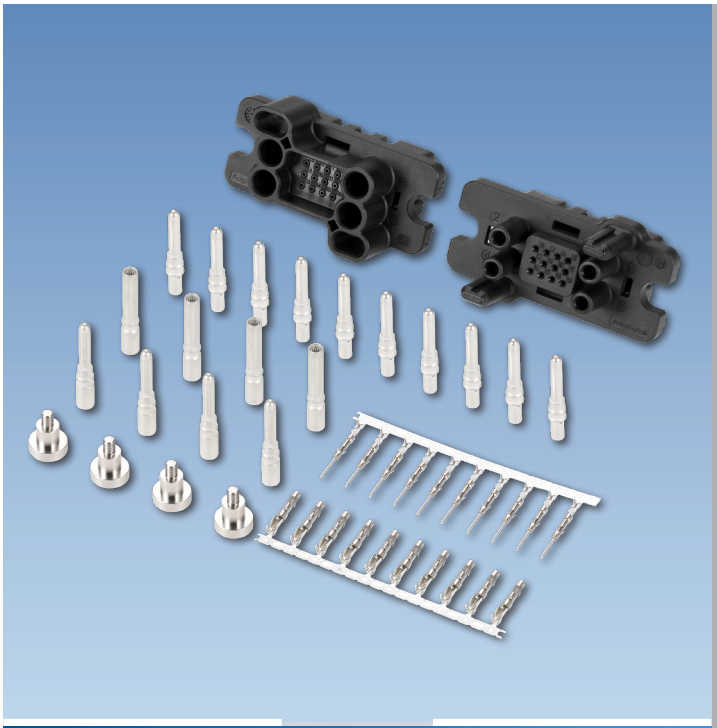
Amphenol®

Application Note

IAN-143



Floating Mate Connector Series

BACKGROUND

Battery-based energy storage and electrified platforms are pushing toward higher power density, tighter packaging, and serviceable, modular architectures. As systems move to drawer-style battery modules and power shelves, designers need an interface that supports blind mating, reduces assembly complexity, and maintains reliable electrical performance over repeated service cycles.

PROBLEM

Many platforms still rely on separate connectors for high-voltage power and low-voltage signal/BMS lines. That increases component count, consumes space, complicates harness routing, and adds service touchpoints. In addition, traditional high-power connections can be sensitive to misalignment during insertion, creating mechanical stress, inconsistent mating, and downtime during module swaps.

AIO SOLUTION

The Floating Mate Connector Series is a floating blind-mate hybrid connector that combines power and signal in one interface for drawer-style battery modules and power shelves. Built around RADSOK® power contacts, it supports up to 120 A per power contact and 1,000–1,500 VDC (variant-dependent). Integral guide pins and optional floating mount hardware improve blind-mate alignment and reduce mating stress during serviceable module swaps. The series is offered in 2+12, 4+12, and 4+12 Mini configurations, with first-mate/last-break positions available for grounding or interlock-style functions. Touch-safe IP2XB power contacts and compliance to UL 4128, TÜV 2PfG2740, and IEC 61984 (UL 94 V-0 insulators) support safe, standards-driven designs.