Amphenol®

Application Note

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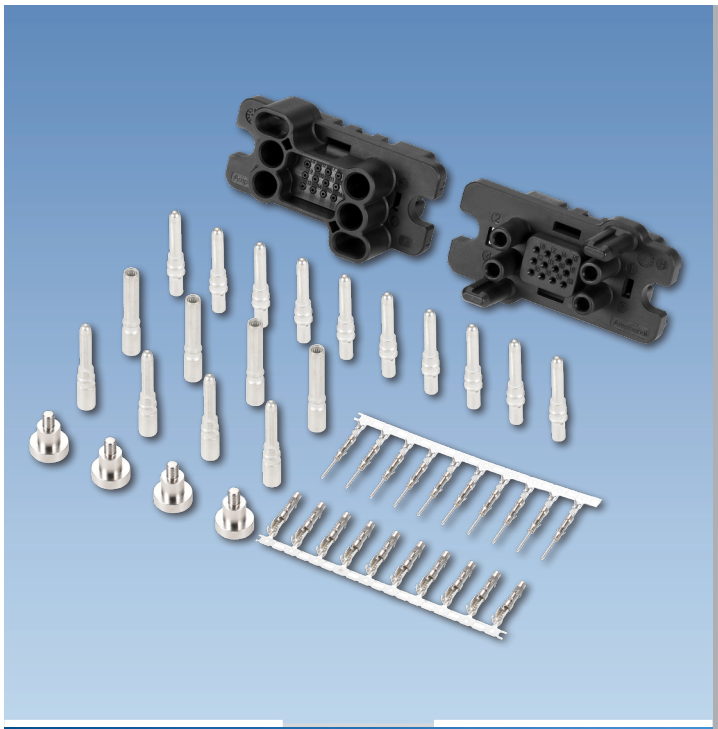

Floating Mate Connector Series

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 integrates high-voltage power contacts and signal positions within a single blind-mate hybrid interface for ESS battery modules, rack-level systems, and other space-constrained power architectures. Built around proven RADSOK® contact technology, it delivers low resistance and improved thermal performance to support dense, reliable power-plus-signal connectivity. Integral guide pins help manage blind-mate engagement and tolerate up to 2.4 mm of misalignment. The series supports high-voltage applications up to 1,500 VDC and power ratings up to 120 A, and it offers a reworkable design with removable power and signal pins using a dedicated tool. UL 94 V-0 insulating materials, RoHS/REACH compliance, and certification/compliance to UL 4128 and TÜV 2PfG 2740 (1,500 VDC) help support safety- and standards-driven designs.