



ePower-Lite Mini X

BACKGROUND

As electrification continues to expand across electric vehicles (EV), hybrid electric vehicles (HEV), fuel cell vehicles (FCV), heavy equipment, and industrial systems, engineers are increasingly challenged to integrate compact high-voltage connectors without compromising safety or performance. To address these evolving requirements, Amphenol Industrial Operations has expanded the proven ePower-Lite Mini family with the new ePower-Lite Mini X, a compact and rugged connector designed for space constrained electrification applications.

PROBLEM

Modern power electronics continue to shrink while electrical demands increase. Applications such as DC/DC converters, PTC heaters, and high-voltage climate compressors require compact connectors capable of supporting high-voltage operation, environmental sealing, touch-safe protection, and optional High Voltage Interlock Loop (HVIL) and EMI shielding. Engineers must balance these requirements while meeting stringent reliability expectations in harsh operating environments.

AIO SOLUTION

The ePower-Lite Mini X is a compact 2-position high-voltage connector designed to provide reliable power transmission in harsh-environment electrification applications. Built upon the proven ePower-Lite platform, Mini X offers optional HVIL and EMI configurations, IP67 and IP6K9K sealing, and touch-safe protection in a lightweight package. Its compact design makes it ideal for DC/DC converters, PTC heaters, climate compressors, EV/HEV systems, heavy equipment, and industrial electrification applications where space, safety, and performance are critical. on the pre-existing 3.6mm ePower-Lite, and provides high current, EMI, and HVIL options, as well as, a secondary locking mechanism and multiple keyway options to prevent mis-mating. The compact, light weight design provides EV manufacturers with a solution that will contribute to weight reductions seen within the EV market.



ePower-Lite 5.7mm 3 Ports

BACKGROUND

In order to meet small space constraints, extend battery life, and meet high current requirements within continuously evolving markets, Amphenol Industrial Operations has added a 3 position, 5.7mm solution to the ePower-Lite product family. Designed to meet specifications from EV/HEV, Heavy Equipment and Fuel Cell Vehicle customers, this light weight, robust connector is positioned to be a staple for years to come.

PROBLEM

Electrical requirements for EV/HEV, Heavy Equipment and Fuel Cell Vehicle manufactures continue to migrate towards higher currents, in order to support fast charging and higher power within their on board applications, not supported by the 3.6mm ePower-Lite. As the world continues the push of electrification, global competition demands higher performance encompassed by compact designs.

AIO SOLUTION

Enter the 5.7mm ePower-Lite series, which meets and exceeds requirements for an integrated design within EV/HEV, Heavy Equipment and Fuel Cell Vehicle markets. This rectangular crimp connector is based off of the pre-existing 3.6mm ePower-Lite, and provides high current, EMI, and HVIL options, as well as a secondary locking CPA mechanism and multiple keyway options to prevent mis-mating. The CPA function is designed to meet SAE USCAR2 requirements. The receptacle terminals utilize a busbar design for easy installation. The compact design provides OEM's with a solution that will contribute to high current needs within the aforementioned vehicle markets.



ePower-Lite 5.7mm

BACKGROUND

To extend the ePower-Lite product family by diversifying to meet smaller size and higher current requirements in the EV Market.

Amphenol Industrial Operations (AIO) has developed this next generation product, used for the connection between OBC to PTC or DC-DC due to the integrated model becoming a dominant trend in the EV Market.

PROBLEM

Within the current EV & HEV Markets the end users are moving to combine OBC & PDU & DC-DC as an integral model. This will allow customers to decrease the amount of connectors needed per application, while also achieving current ratings of up to 120A. The newly developed AIO product provides end users with a competitive advantage over competitor's products.

AIO SOLUTION

Amphenol Industrial Operations has developed the ePower-Lite 5.7mm to meet the requirements of the integrated model design of the EV Market.

It's a rectangular connector based on the ePower-Lite 3.6mm. Featuring high current carrying capabilities, optional EMI and HVIL, and secondary lock with keyway function which are all benchmarks of the connector series.

The sustained current is up to 120A max and provides two types of wire connections (16mm² and 25mm²) and a busbar option for the receptacle side.





ePower-Lite Mini

BACKGROUND

Diversifying the ePower-Lite product family allows for smaller space constraints paired with high current requirements in the EV market. In doing so, Amphenol Industrial Operations has developed a next generation product used for the interconnect between OBC to PTC and/or DC-DC.

PROBLEM

The desire for light weight, cost effective solutions within the EV market are becoming increasingly prevalent, without sacrificing robustness in design. Global competition demands high performance and a compact design, at lower cost.

AIO SOLUTION

The ePower-Lite Mini series meets and exceeds the requirements for integrated model design in the EV market.

The rectangular crimp connector is based on the pre-existing 3.6mm ePower-Lite, and provides high current, EMI, and HVIL options, as well as, a secondary locking mechanism and multiple keyway options to prevent mis-mating. The compact, light weight design provides EV manufacturers with a solution that will contribute to weight reductions seen within the EV market.

