Amphenol®

Application Note

IAN-43

SAE J 1772™ Level III 200A 600VDC Charger

BACKGROUND

In the world of Electric Vehicles, one of the key aspects is the charging connector. The vehicle operator must be able to have the automobile charged to maximum battery capacity. This charge time can vary from minutes to hours, depending on the amount of amperage used in the charger. Normal charging at 30 to 70 amps can be accomplished at night during off peak hours. For those instances when circumstances demand faster charging, a significantly higher charging amperage level and corresponding connector must be employed. The SAE J1772™ Level III Sub-committee has been discussing "Fast Charge" technology for nearly one year. Amphenol already supplied 550A DC charge couplers for fleet users.

PROBLEM

Charging an electric vehicle with 200A current at 600VDC is not an application to be taken lightly. Only a ruggedly engineered connector, manufactured by a company who understands all aspects of the application should be considered. Stringent UL safety requirements must be met and performance in harsh environmental conditions must be guaranteed.

AIO SOLUTION

Amphenol's solution to this application is the 200A 600VDC Coupler. Built around Amphenol's patented RADSOK® contacts, this connector will enable the operator to conductively charge the vehicle in less than one hour. Two (2) 8mm power contacts safely conduct 200A of current. In addition to the two (2) 8mm power contacts, there is one (1) 5.7mm ground contact and up to six (6) 2.4mm signal contacts. All contacts are designed for safety, incorporating IP2X "FingerTouch" contacts designs. The connector bodies will be constructed of high strength molded materials. As an added benefit, these assemblies can be purchased already terminated and over-molded to cable for moisture resistance and strain relief.

It is unlikely this connector will be sold to the average home owner for use in the garage. Our intended market is the companies that design and manufacture the thousands of charging stations that will inevitably pop up in and around metropolitan areas.