

Cable Diameter Effect on the Contact Temperature of Power Automotive Connector

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Abstract : In the electric vehicle, high power leads to high current; automotive power connector should resist to this high current in order to avoid a serious damage caused by the increase of contact temperature. The purpose of this paper is to analyze experimentally and numerically the effect of the cable diameter variation on the decrease of contact temperature. For this reason, a finite element model was developed to calculate the numerical contact temperature for several cable diameters and several electrical high currents. Also, experimental tests were established in order to validate this numerical model. Results show that the influence of cable diameter on the contact temperature is never neglected.

Keywords : contact temperature, experimental test, finite element, power automotive connector

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