

Thermal Network Model for a Large Scale AC Induction Motor

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Abstract : Thermal network modelling has proven to be important tool for thermal analysis of electrical machine. This article investigates numerical thermal network model and experimental performance of a large-scale AC motor. Experimental temperatures were measured using RTD in the stator which have been compared with the numerical data. Thermal network modelling fairly predicts the temperature of various components inside the large-scale AC motor. Results of stator winding temperature is compared with experimental results which are in close agreement with accuracy of 6-10%. This method of predicting hot spots within AC motors can be readily used by the motor designers for estimating the thermal hot spots of the machine.

Keywords : AC motor, thermal network, heat transfer, modelling

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