

DC TRACTION MOTOR CONDITION MONITORING

This report considers methods for the condition monitoring of DC traction motors and concludes that the detection of radio frequency noise generated by motors with poor commutation is potentially effective.

Traction motors play an important role in the reliable running of the trains. Condition monitoring of traction motors can be used to provide advance warning of any failures which, if not detected, can be expensive and disruptive. The most common type of motors for traction are DC motors of series and separately excited types.

Different methods of assessing commutation in a DC traction motor have been considered. Measuring radio frequency noise generated by the motor during sparking has been studied in detail. The results indicate that various designs of aeriels can be used to provide a non-contact method for measuring commutation. The output of the aeriels can be measured using a specially designed instrument or an electronic millivoltmeter.