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# DIAGNOSIS OF INDUCTION MOTORS BASED ON ANALYSIS OF STARTING ELECTROMAGNETIC TORQUE


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**Abstract**

*The article examines the characteristics of induction motors (IM) diagnostic method based on an analysis of change of the electromagnetic torque, which is required to start the movement of the rotor. The value of starting torque varies due to the appearance of damage of the motors. The proposed method while ensuring sufficient reliability to diagnose any engine required simple measuring devices and does not require special training. You need to conduct a comparative analysis of the values of the supply voltage at which the movement begins rotor,*

*respectively, for damaged and undamaged IM. Two major cases of defects – short-circuit the stator winding and destruction of cage bars of the rotor. It is shown that in these cases the change starting torque (voltage) occurs in different ways: in short circuit stator starting torque is reduced (increases of the voltage), and at break rotor bars – on the contrary. Mathematical models of IM (capacity 1.7 ... 200 kW) proved high diagnostic sensitivity of method, ensuring its widespread adoption.* References 8, figures 6.

***Key words***: diagnostics of asynchronous motors, the start time of the electromagnetic, mathematical model, damage the stator and rotor windings.

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