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IMPROVEMENT OF A DOUBLE-CIRCUIT EQUIVALENT CIRCUIT OF THE DEEP-SLOT INDUCTION MOTORS

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Abstract

Method of calculation of according to catalog data of parameters of two equivalent circuit of the deep-slot induction motors are improved. In the first for the accounting of a skin-effect the rotor is presented by one contour with dependent on slipping active and inductive resistance, and to the second – two in parallel the connected contours with resistance, constant and independent of slipping. A method is based on the iteration numeral decision the equations for currents and moments, which are depending on the parameters and it provides in both equivalent circuits the coincidence of data which are calculation and catalogue for slipping nominal and equal to unit, but distortions of descriptions of current and moment take place at other slipping. For the removal of defects the new equivalent circuit is offered with two contours of rotor, resistances of

each are the functions of slipping. They equal middle of parameters of two proposal of equivalent circuit. Examples made confirmative efficiency of hybrid equivalent circuit. References 10, figures 5.

Key words: induction motor, deep-slot rotor, equivalent circuit, double-circuit, hybrid, current, resistance, torque.

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