RESEARCH OF ELECTROMAGNETIC COMPATIBILITY OF THE COMPENSATED INDUCTION MOTOR AND POWER LINE

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There was researched the compensated induction motor electromagnetic compatibility with a power line.

The compensated snduction motor, electromagnetic compatibility, power line, harmonic, reactive power

A three-phase asynchronous motor that makes basis of electric drive of working machines in agriculture is characterized by high nominal power indexes. However as a result of technological errors at making of asynchronous engines, underloading and heavy external of it environments real power indexes get worse, that results in the decline of energy efficiency of consumers. For the improvement of power descriptions of asynchronous engines it is suggested to apply internal capacity indemnification of reactive power.

Realization of internal capacity indemnification of reactive-power in asynchronous engines can be carried out in number of different ways depending on the accepted chart and amount of parallel branches of puttee of статора of base machine. The first method of internal capacity indemnification of reactive-power in asynchronous motors consists in that at successive connection of semiwindings of stator one of them is shunted by the condenser of electric capacity. Thus a shunted semiwinding interchanges a reactive-power not with the network of feed, but with a condenser. Hereupon the unshanted semiwinding of phase of stator winding rids of transmission of reactive-power to the shanted semiwinding, and current of unshanted semiwinding.

The personal touch of this method of internal capacity indemnification of reactive-power in asynchronous motors is reduction to the current and losses of power not only in the network of feed, as it takes place during connecting of condensers in parallel to the consumer, but also in an engine due to reduction to the stator current.

For the motors of small-yield during complete indemnification for providing of condition of doubling of phase zones the corner of spatial change of semiwindings in relation to each other it comfortably to accept such that is arrived at by distribution of phase zone of stator winding on two equal parts.

Doubling of amount of phase zones of puttee of статора eliminates the most dangerous parasite accordions from harmonious composition of magnetic-field of induction motor.

For experimental research of electromagnetic compatibility of compensated induction motor with the network of feed after the level of spatial ultraharmonics a digital oscillograph with corresponding software and module of galvanic upshot was used.

The oscillograms of tension were thus taken off on the phase puttee of статора and current that is consumed compensated induction motor from the network of feed for two cases: at idling and nominal loading

The use of internal capacity indemnification of reactive-power improves electromagnetic compatibility of compensated induction motor by comparison to base induction motor on the size of reactive-power and level of ultraharmonics.