ANALOGIES AND FEATURES OF THE COMPENSATED ASYNCHRONOUS MACHINES AT DIFFERENT NUMBER OF THEIR PHASES

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The features of physical processes of the compensated asynchronous machines, their influence, are educed on the increase of power efficiency of machines, special terms of principle of convertibility. Taking into account the analogy of charts of phase stator winding single methodology of calculation of descriptions of the three-phase and monophase compensated asynchronous machines is offered in the set and kvasistable processes of their work

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Widespread in a technique three-phase asynchronous electric motors with a shortcircuited rotor are simple, reliable, relatively cheap, but, in accordance with principle of their action at creation and use of revolved magnetic-field, serious defects are inherent them. Main from them is a consumption from the network of two kinds of electric energy : active for transformation of it to mechanical and inevitable in the process of transformation thermal losses, and reactive, that will not be transformed in other kinds, but goes to creation of magnetic-field, necessity in the process of electromechanics transformation of energy to the electric machine. Thus her reactive current increases the general current of machine and all feed-in system, creating the additional losses of energy in them, reducing efficiency and coefficient.

One of methods of liberation of generators of the electric station making of reactive energy and feed-in network from a transmission is her consumer, indemnification of reactive-power that comes true by setting of additional reactive energy sources as possible nearer to the consumer so-called, external, transversal. In distributive electric networks as such source usually accept the battery of condensers of electric capacity, that set in parallel to the consumer or group of them. Between inductively - active consumers and capacity condensers is an exchange of reactive energy, releasing the feed-in system from crossflows compensated. Working currents, losses of energy, powerfailure, diminish in all elements of the electric system (except a consumer). But in a consumer, in particular, for example, in an asynchronous

engine, they remain former, as well as to indemnification of reactive-power, reactive energy it gets now not from the remote generators of power-stations, and from the additional sources located next to it by an exchange by it between condensers and consumer.

The change of spatial position of обмоток of статора on the chart of turning AT in an asynchronous machine with the revolved magnetic field causes a change in time of action of phase corners their E.M.F. and, consequently, currents, tensions without the change of her induced reactive resistances. So there is transformation of spatial coordinate of electric size to the temporal coordinate in an electromagnetic chain with the revolved magnetic field. Combination of this property of обмоток of статора on the chart of turning AT with operating of electric capacity on his exit creates the effect of internal capacity indemnification of reactive-power in asynchronous machine.

The compensated asynchronous machine, as well as any other electric machine, possesses property of convertibility, id est can work in the modes of engine and generator. But spatial displacement of additional puttee of stator of relatively basic puttee against direction of rotation of magnetic-field in the motive mode and including of both windings on the chart of turning AT on an electric capacity the special stipulate conditions of compensated induction machine.

The three-phase compensated autonomous asynchronous generators can be the deserving competitors of synchronous generators in autonomous power plants, where first the monophase compensated generators can be successfully used in a technique.