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## FEATURES OF THE AUTOMATED CONTROL OF A DIFFERENCE OF ROTATION OF POWER ELECTROMECHANICAL CONVERTERS

In conditions of distribution of automation of technological processes of processing of raw material, an increased requirement to productivity, accuracy and quality at mass manufacturing the increasing value get systems of the automated control. Development of a science and technics, increased requirement to quality of production pull behind itself increases of expenses for the automated control. So, expenses for the automated control over some branches exceed 50 % from the cost price of production.

Rather often there is a problem of system engineering of the automated control of a difference of rotation of power electromechanical converters (EMC), for example, rewind of strip materials, continuous rolling mills, rewind of papers and processing of diamonds. The essence of this problem consists in maintenance of relative synchronization of frequencies of rotation of rotors EMC, and also maintenance of necessary accuracy and speed of synchronization. As a rule, requirements to accuracy thus above accuracy of support of absolute value of frequency of rotation EMC.

Instability of work of electric drives as objects of management depends on ways of management EMC and from features of mechanisms while in service. Change of electromechanical parameters of electric drives is carried out at change of such basic sizes as: parameters of electromagnetic contours in коле "converter-engine", transfer factors of the converter, to a stream of excitation of engines, the moments of inertia and resistance of mechanisms. Besides while in service EMC there can be essential changes on a spectral warehouse and intensity of raised influences that can lead to substantial growth of dynamic errors. It in turn results up to necessity of recustomizing of parameters of frequency regulators (FR) which are a part of electric drives, for increase of accuracy of synchronization of frequencies of rotation EMC. Therefore, it is necessary to develop system which structure includes two measuring channels of angular speed and two frequency regulators on leading and conducted EMC for the automated control of a difference of rotation. Automatic fine tuning of frequencies of rotation EMC can be carried out by means of the microcontroller which traces frequencies of rotation leading and conducted EMC, compares them and gives out a signal on a frequency regulator for change of frequency of rotation conducted EMC on size of its deviation.

Feature of the automated control of a difference rotation EMC is use of frequency regulators that allows not only to change frequencies of rotation from zero up to the maximal value, to make the automated control of frequencies of rotation over modes of dispersal, braking, to a reverser on the raised angular speeds, and to carry out actual decrease in the moment which develops EMC on low frequencies of rotation, to provide the S-shaped characteristic that allows to gather instantly the maximal speed of rotation without jerks and delays. Smooth regulation and as much as possible necessary task of speed allows to depart from reducers, variators, throttles, that essentially simplifies systems of the automated control of a difference rotations of power electromechanical converters, raises reliability and reduces operational expenses.

Thus, for improvement of quality of production it is necessary to raise accuracy of synchronization of frequencies of rotation of power electromechanical converters that demands development of precision measuring channels of angular speed which accuracy first of all depends on the gauge of angular speed, and also use of frequency regulators at the automated control of a difference of frequencies of rotation.

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