

**STUDY OF OPERATING CONDITIONS OF ASYNCHRONOUS
MOTORS IN ASYMMETRICAL MODES**

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Abstract. *In this article, a current converter was used to control and control the reactive power of an asynchronous motor. The current transformer is placed between the stator blades of the asynchronous motor and the main winding. And this asynchronous motor emits a signal in the form of voltage due to the main and stray magnetic currents generated in the stator winding. Taking into account the interaction of various characteristic quantities, the study of the dynamic characteristics of the signal received from the measuring instrument, the primary and secondary signal transformation parts of the converter, the signal transmission elements and the differential describing the transition processes due to difficulties in formulating equations, research is conducted on the basis of advanced mathematical apparatus - the graph model and its analytical expressions.*

Key words: *asynchronous motors, symmetrical modes, rotor.*

Introduction. Asynchronous electric machine — an alternating current electric machine whose rotation frequency does not correspond to the rotation frequency of the static magnetic field. Main parts: a stator consisting of a steel core mounted on a frame and windings wound on the core, and a rotor consisting of a steel core mounted on a shaft and windings placed in its grooves. Both the rotor core and the stator core are assembled from steel plates. According to the method of interconnecting coils and supplying current from the source, the stator can be

made single-, double-, triple-, and multi-phase. Three-phase and multi-phase circuits are connected to each other in the form of star, triangle and polygon. According to the preparation of the coils, the rotor is divided into short-circuited and phase-rotor types. The air gap between the stator and the rotor is made as small as possible up to 0.025 mm. The rotation frequency of the asynchronous electric machine rotor depends on the rotation frequency of the stator magnetic field and is determined by the frequency of the consumed current and the number of pairs of poles of the machine. Depending on the value of the slip displacement, the Asynchronous electric machine can be used as an asynchronous electric motor and asynchronous generator.



0.75 kVt, 1420 ayl/daq, 50 Hz, 230—400 V, 3.4-2.0 A xarakteristikali asinxron dvigatel stator va motori.

An asynchronous motor has two most important parts in its design: the rotor and the stator. These parts are separated by a small air gap. The active parts of the motor can also be called the coil and the magnetic circuit. Structural parts provide cooling, rotor rotation, strength and rigidity. The stator is a cylindrical cast steel or cast iron body. Inside the stator housing there is a magnetic circuit, from which a stator coil with specially cut grooves is installed. Both ends of the winding are brought out to the terminal box and connected with a triangle or a star. Starting from the ends, the stator housing is completely closed with bearings. Bearings on the rotor shaft are pressed into these bearings. The rotor of an asynchronous motor is a steel shaft, on which a magnetic circuit is pressed. Structurally, rotors can be divided into two main groups. The motor itself gets its name according to the design principle of the rotor. An asynchronous motor with a short-circuited rotor is of the

first type, and there is also the second. This is a phase-rotor asynchronous motor. Aluminum rotors are cast into the windings of a short-circuited rotor motor it is also called short-circuited due to the similarity of the appearance of such a rotor with a short-circuited rotor motor and they are closed at the ends. The phase rotor has three windings, which are interconnected in a star. The ends of the coils are attached to the rings mounted on the shaft. When starting the motor, special fixed brushes are pressed on the rings. Resistors are connected to these brushes, which are designed to reduce the starting current and start the induction motor smoothly.

Summary. In the above-mentioned article, we have considered the operation of asymmetric process of asynchronous motors and its advantages and disadvantages, as well as its structure.

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