

Annotation

In this dissertation work, a two-motor asynchronous electric drive for synchronous rotation of a gantry crane is investigated. In this research paper, the features of the gantry crane, the mathematical description of the generalized asynchronous machine, the methods of controlling electric drives and the algorithm of the PUM system were considered. The parameters of the block diagram of an asynchronous electric motor, the calculation of the total feedback coefficient for misalignment, and the calculation of transients are calculated.

Methods of control of the electric drive was carried out in three ways: scalar, vector and direct torque control. Further investigation was made by direct control of the moment, the most optimal control method.

The algorithm of operation of the PUM system is considered, the principle of which is based on the direct control of the stator flow coupling and the electromagnetic torque of the electric motor by selecting the appropriate control vector of the stator voltage.

An experimental part was made with a moment limitation in the PUM system, the use of which helps to reduce the wear of the movement mechanism of the gantry crane.

