

Annotation

The given graduation project covers the development of the tower crane with the micro integrated system. All process, constructive and operational issues had been considered in the design. The conceptually new control system had been developed, which hadn't been used before. The calculation of the power of the motor was made and the type of motor brand MTKF 412-8 and the corresponding frequency converter brand ATV71HD30N4 were chosen. The block and the virtual model of the electric drive of crane's lifting mechanism and explore its dynamical characteristics in the MatLab program were worked out.

In the economic part comparative analysis of the two versions of the drive control system of the lifting mechanism was made. For each option capital investments and operating costs were calculated. Payback period of the most cost-effective option's investments was detected.

In the «Life safety» part dangerous and harmful factors when the tower crane install and operate the tower crane were analyzed. Crane's stability and protective earth tap were calculated.