ANNOTATION

This graduation project discusses the process of optimizing the control system of a twin-engine electric mine face conveyor by equipping the electric drive with a frequency converter - an asynchronous motor. The classification, device, technological process of belt conveyors. The task of optimizing the control system of the electric conveyor belt is solved using the computer simulation program MATLAB. Transient schedules, qualitative characteristics are given and, by comparison, an optimized electric drive control system is selected that meets such basic technological requirements as reliability, continuity of operation, transient stability, and the absence of the need for regular repairs.

In the section on life safety, hazardous and harmful production factors are analyzed during the operation of a lifting installation, as well as the calculation of the heat of a mine room through windows. The amount of fire extinguishing equipment for the mine room is calculated.

In the economic justification section of the thesis project, the calculation of the feasibility of optimizing the conveyor control system is performed. All necessary investments are calculated, the annual costs of the optimized electric drive and the net profit obtained by saving energy consumed. There are also necessary calculations to determine the payback period of this project.