ABSTRACT

Diploma done on 69 pages and contains 30 figures and 4 tables.

The purpose of this work – the development of control systems automatic mooring winches, which operates in manual and automatic mode. The analysis of existing control systems was made, and the most promising and developed way was selected. Selection mechanism was individually realized for particular vehicles, and electric drive was chosen. The parameters of the induction motor were calculated according to the catalog. For the basis the vector system is the induction motor control with torque control algorithm that provides high performance and provides significant advantages: accurate static and dynamic speed control and torque, big enough starting torque. The system's dynamic and statics was studied, by mathematical modeling that showed quite acceptable results, indicating that the use of modified calculations and equipment selection in real shipbuilding.

Calculation and realization of this thesis are provided by using the following programs: MATLABR2012b, Microsoft Office Word 2007, Microsoft Office Visio 2007.

AUTOMATIC MOORING WINCH, INDUCTION MOTORS, VECTOR CONTROL SYSTEM, VECTOR TORQUE CONTROL, POWER, MATHEMATICAL MODEL, COORDINATE TRANSFORMATION, MODELING.

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