

## SUMMARY

The Master Thesis consist of 108 pages and 37 figures, 7 tables and 30 references and the graphical part on 7 pages A1.

The purpose of this work is to create a concept for the study of electric apparatus and elements of protection of electric drives, as well as the development of laboratory stands and methods for carrying out laboratory work on them. The object of research in this thesis is modern apparatus and elements of protection of electromechanical systems. The research and analytical review is carried out in the field of modern low-voltage protection devices, their principle of work and structure are considered. Laboratory stands have been developed and implemented, which make it possible to study the characteristics of electrical apparatus and elements of electromechanical systems. The methodical recommendations for work on the developed stands are given. The current-time characteristics of automatic switches and thermal relay with nominal current of 2 A were investigated, and the threshold for the operation of differential interrupturer was determined. The principle of working with a programmable timer, a time relay, a pulse relay and a phase control relay are considered and described.

Calculation and realization of the project was provided through the use of these programs: *MATLAB R2009b*, *Mathcad 2014*, *Microsoft Office Word 2010*, *Microsoft Office Visio 2010*, *MathType 6.9*, *Splan 7.0*.

MOTOR PROTECTION APPARATUS, CURRENT-TIME  
CHARACTERISTICS, TRANSIENT, PROGRAMMABLE TIMER, DIRECT  
START,ELECTRICAL DRIVE

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