

HIGHER TECHNICAL SCHOOL
ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

THE APPLICATIONS OF HALF BRIDGE DEVICES

by

ADAMOS KOUZANOS
/1077

HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

**THE APPLICATIONS OF HALL EFFECT
DEVICES**

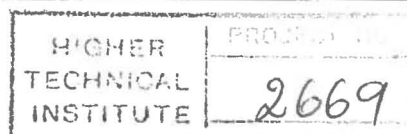
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DIPLOMA PROJECT REPORT SUBMITTED

by

ADAMOS KOUPPANOS

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**DEDICATED TO
MY PARENTS**

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ABSTRACT

The objectives of this project are to investigate the commercially available Hall Effect Devices and to use a suitable type to develop, construct and test a force measuring device (measuring the forearm force exerted by a normal person).

This report starts with an introduction to Hall Effect Devices, general information, comparison with other technology available, basic principles of operation, etc.

The nature of this project established the requirements of the circuit design for a force measuring device. The requirements as arise through the process of construction are:

1. Construct a proper power supply for the Hall Effect Device.
2. Design and construct a zero adjustment circuit.
3. Design and construct a circuit which can easily indicate the full scale force exerted and percentages of it by using LEDs for the amateur user.
4. Design and construct a circuit which will give an arithmetic indication for the force exerted for the expert user.

INTRODUCTION

This project deals with the development a Force Measuring Device. It will be used for the measurement of the forearm force exerted by a normal person on a metallic bar.

The project is divided into nine chapters where the first is an extended introduction to the Hall effect devices while at the second its an explanation for our selection of the certain Hall effect device.

The third chapters deals with the constructions on which the forearm force will act and a brief reference to the theory which concerns this subject.

The fourth and the fifth chapters are focused on two of the most important circuits of the construction the power supply and the zero adjustment circuit respectively.

The sixth chapter contains experimental results obtained by the preliminary calibration of the construction.

The seventh and the eighth chapters deals with the output indication that the construction gives. The first gives an optical indication while the second arithmetic indication.

The ninth chapter contains the final results

At the tenth chapter are contained the costing and the conclusions of the whole project.

Finally the eleventh chapter contains useful appendices.