

**DEVELOPMENT OF THE CONTROL
SCHEME OF A PALLET MACHINE USING A
PROGRAMMABLE LOGIC CONTROLLER.**

Project report submitted by:

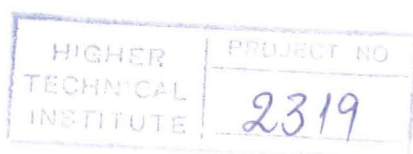
Polydorides Nicholas

In part satisfaction of Award of Diploma of
Technician Engineer in Electrical Engineering of the
HIGHER TECHNICAL INSTITUTE

Nicosia, CYPRUS

Project Supervisor: **Mr. J. Demetriou**
Lecturer in Electrical Engineering, H.T.I.

External Assessors:-



June 94

SUMMARY

Writing this report an effort was made to represent the programmable logic controller. In the pages of this project we are trying to examine the PLC from all the possible angles. Of course the definition of something is not enough to make us familiar with it. A more careful one pedantic observation will lead us to distinguish its main functioning parts, one by one, After this taking each module we analyzed it and explain its rule in the whole controller's operation.

It should be meaningless to examine a programmable device without referring to its programming facilities. A brief reference has been made in the methods of programming the controller as well as the available programming devices.

In this way the basic idea of the PLC has been given to the Reader, who is waiting for something more practical now. This inquiry will become reality when an application program was asked to be constructed. The application concerns a pallet machine. All the working steps followed till we reached the goal are clearly shown, from the customers' request to the completed construction of the whole switchboard including the PLC and the Ladder Diagram Programming.

The costing for such an application and a comparison with the other correctional methods is presented in chapter three.

At the end of this report, now that we are sure that the reader is more than familiar with the programmable controller a last effort to show the huge capabilities of the PLC. Is made more specifically a number of clever and very useful, small applications programs are shown which can be used inside other user programs to achieve certain goals such as sequental switching etc.

Furthermore, a fault Table for the controller's disturbances, the possible reasons that caused them and first actions made by the user.

CONTENTS

CHAPTER ONE	PAGE
Summary.....	1
Introduction.....	2
Definition of the programmable logic controller.....	4
Overview of the programmable logic controller.....	4
Advantages and disadvantages of the PLC.....	9
Capabilities of the PLC.....	13
Programming the PLC.....	16
The ladder diagram.....	19
Programming capabilities of the PLC.....	20
Description of the programming instruction.....	24
 CHAPTER TWO:	
Client's request - Operation description.....	28
Flowchart of the pallet machine operation.....	32
The stepping table.....	36
Solutions proposed for the pallet machine.....	38
The power circuit diagram.....	41
The control circuit diagrams.....	41
Inputs table.....	47
Outputs table.....	48
Ladder diagram.....	50
 CHAPTER THREE:	
Comparison of PLC with other conventional networks.....	53
Costing for the pallet machine system.....	54
 CHAPTER FOUR:	
Sequential switching application.....	57
On delay time relay application.....	58
Remedy of an interference	59