

HIGHER TECHNICAL INSTITUTE
ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DEVELOPMENT OF A FISH COUNTER

MENICOU MARIA

1996

DEVELOPMENT OF A FISH COUNTER

PROJECT REPORT SUBMITTED BY

MARIA MENICOU

TO THE

ELECTRICAL ENGINEERING DEPARTMENT

OF THE

HIGHER TECHNICAL INSTITUTE

NICOSIA , CYPRUS

IN PARTIAL FULFILLMENT ON THE REQUIREMENTS

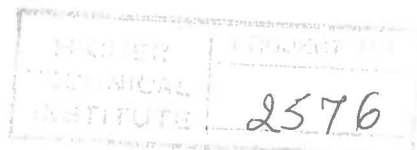
FOR THE DIPLOMA OF

TECHNICIAN ENGINEER

IN

ELECTRICAL ENGINEERING

JUNE 1996



CONTENTS

	PAGE
ACKNOWLEDGEMENTS	
ABSTRACT	1
INTRODUCTION	2
CHAPTER 1 : FISH COUNTING SYSTEM	3
1.1 Fish Counting System	4
1.2 Advantages of Fish Counting System	5
CHAPTER 2 : DEVICES USED IN COMBINATION WITH A FISH COUNTER	6
2.1 Fish Grader	7
2.2 Why do we use grading	8
2.3 Fish Pumps	
CHAPTER 3 : DIFFERENT TYPES OF SENSORS	10
3.1 Different Types of Sensors	11
3.2 Why use sensors	
3.3 Inductive Sensors	
3.3.1 Other advantages of Inductive Sensors	12
3.4 Ultrasonic Proximity Sensor	13
3.5 Analog Sensors	14
3.5.1 Normally Open Switching	
3.6 Photoelectric Sensors	15
3.7 Infra-red Devices	
CHAPTER 4 : CIRCUIT BOARD	17
4.1 Explanation of circuit board	18
CHAPTER 5 : OTHER EXISTING COMMERCIAL SYSTEMS	23
5.1 IMPEX	24
5.2 ALCOR	25
5.3 DASK ORREDFODER A/S	27
CHAPTER 6 : CONCLUSIONS	29
6.1 Conclusions	30
6.1.1 Introduction	
6.2 Using this project	
6.2.1 Advantages	
6.2.2 Disadvantages	
6.3 Possible solutions to existing problems	31
APPENDICES	

A C K N O W L E D G M E N T

I would like to express my thanks to my project supervisor Mr Spyros Spyrou for his guidance and assistance given throughout the project period .

My thanks and appreciation to my fellow student Theocharis Kyriakou for his useful advices and help given during the project period .

Maria Menicou
3rd Year Electrical

A B S T R A C T

This project deals with the development , construction , testing and calibration of an electronic counter suitable for counting fish in a fish farm . At various fish farms in Cyprus and all over the world similar devices are used for counting the amount of any size of fish .Fish Counters are used in combination with Fish Pumps or Fish Graders .

This device was constructed in such a way to have continuous measurements of fish using the help of a sensor .

To be in a position to satisfy several agriculture needs there was a co-operation with the Agriculture Research Institute .

I N T R O D U C T I O N

Currently , as the main scientific foundations are being brought together with the essential organizational needs , aquaculture is becoming a more clearly defined area of study and development , as many successful sections of the aquaculture industry will testify . However , as in many multidisciplinary subjects , there is frequently a need to collect and integrate the many developments occurring in the individual component subjects , and to assess and express from the viewpoint of the wider discipline the significance of these developments .

The field of aquaculture that is examined in this project , is fishfarming and more specifically an application in this field .

This project is developing , constructing , testing and calibrating an electronic counter suitable for counting fish in a fishfarm