INSTRUMENTATION MONITOR OF A CAR

Project Report Submitted by:

Elias Vryonides

In part satisfaction of the award of Diploma of technician engineer in the field of electrical engineering of the Higher Technical Institute, Nicosia, Cyprus

Project Supervisor: Dr. A. Mallupas

Ph.D Elec. Eng.

Lecturer

H.T.I.

External Assessors

Type of Project: Individual

/

Group

JUNE, 1989.



Abstract

During the past decade great improvements have been achieved in the development of the effective operation of cars. This includes the sophisticated development of microprocessor controlled instrumentation system of cars.

Great deal of emphasis is given to the design of controllers for the smooth engine operation and economical running of a car. Apart from that, the development of a digital instrumentation system is a big step forward in the Cyprus industry. This can be considered since the successful operation and performance of a car depends primarily on the physical realization of what is actually going on when the car is running.

Modern ideas, and microelectronic improvements have be taken advantage of, to provides in this study a successful, reliable, and effective instrumentation system for a car. Additionally experimentation has ended up in providing a fully operational and useful system which, with slide improvement and practical readjustments can be readily used practically in the Cyprus car industry, because it has nothing less that the European modern systems.

Vryonides Elias June. 1989.

CONTENTS

Acknowledgements

Contents

Abstract

Introduction

CHAPTER 1

7	Generally about Car instrumentation	, inches
- C	Relevant Parts to be Controlled	rij K
1.2.1	Digital tachometer	,- ,-:
i na	Bar-Graph Fuel Gauge	17
1.2.3	Temperature Indicator	S.
1.2.4	Battery condition indicator	4
1.2.5	Pressure Indicator	10 1.
1.2.6	Bargraph Speed indicator	Á
1.3	Transducers Used	ć
A Company	Fuel level Sensor	7
1.3.2	The Temperature transducer	7
	Pressure transducer	Ö
1.3.4	Speed transducer	

CHAPTER 2

2.1	Design of the system	9
	A digital tachometer	9
2.1.2	The bargraph fuel gauge	1.0
The state of the state of	The temperature Indicator	de de la constitución de la cons
2.1.4	The battery Condition Indicator	12
2.1.5	Pressure Indication	12
2.1.6	The Bargraph speed Indicator	Section 5
19 19 11 11 11	Limitations	Sec. 7
CHAPTE	<u>R 3</u> : Practical Construction	
5.1	Digital Tachometer	
3.1.1	RPM Measurement	1 11
3.1.2	Circuit description	100
3.1.3	Calibration Procedure	17
S.J	Bargraph Fuel Gauge	17
3.2.1	Circuit description	400%
3.2.2	Calibration Procedure	10
nger hater Salitation	Temperature Indicator	19
5.5.1	Circuit Description	
3.3.2	Calibration Procedure	20
3.4	Battery Condition indicator	22
3.4.1	Circuit description	73 °V 25 N
3,4,2	Construction Test	23

5.5	Pressure Indicator	23		
Z. O. 1	Circuit description	23		
3.5.2	Construction Test	24.		
3.6	Bargraph Speed indicator	24		
316.1	Circuit description	24		
3.6.2	Calibration	25		
CHAPTER	4			
4.1	Comments	27		
An Z	Conclusions	20		
4.5	Suggestions	28		
APPENDICES				
Appendix 1: Bibliography				
Appendix 2: Data streets				

Appendix 3: Printed Circuit Boards

Appendix 4: Component Lists