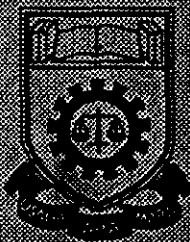


**DEVELOPMENT OF SOLID STATE  
AUTOMATIC CONTROLLER  
FOR SINGLE PHASE GENERATOR**

Thesis presented in partial fulfilment for the award of the  
Advanced Diploma in Electrical Engineering of  
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## **ABSTRACT**

The objective of this project is to improved an automatic control system for Single Phase Generator. The designing and developing of the fully automatic system is expected to enhance the usage of the standby generator and its application in domestic and industrial will be widened. The jobs involved the development and design of the solid state controller, construct of PCB circuit using smartwork software, hardware development and interfacing of relay. The system developed, will be able to activate a Single Phase Generator to provide an automatic backup supply during power failure. The solid state controller is operated by using sensor, voltage comparator, timer and decade counters to control a bank of relays.

# **DEVELOPMENT OF SOLID STATE AUTOMATIC CONTROLLER FOR SINGLE PHASE GENERATOR**

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## CHAPTER 1

### 1. INTRODUCTION

#### 1.1 Introduction

Electricity industry has grown to become an essential part of our life. When the electrical distribution system experiences power interruptions, on-line equipment such as computers, alarm control system, machines will stop operating in upset in process unit, environmental problems and loss of production. To minimise the impact of momentary power disturbance, it is highly desirable that a backup system such as backup battery or an Uninterruptible Power Supply (UPS), and standby generator need to be introduced in the system. The standby generator acts as:

- a) An intermittent power supply to deal with emergencies.
- b) Geographical remoteness of public utility supply mains.

Single phase generator is widely used nowadays as a means of generating electrical power to supply electrical energy. It is suitable for low power application and manage to provide a comparatively cost effective solution as an alternative standby source. A study on developing a solid state controller is carried out from previous work to improve the operation of automatic standby system. Several problems in the system from previous work such as:

- a) Relay 1 always ON during main supply ON or during main supply failure.
- b) Controller circuit consist four main circuit in defferent boards.