AUTOMATED LOW VOLTAGE FUSE MONITORING SYSTEM WITH GSM CAPABILITIES

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ABSTRACT

The main objective of this project is to develop an Automated Low Voltage Fuse Monitoring System with Global System for Mobile Communication Capabilities (GSM). This project is mainly focused on building a working system with available built hardware in market. It consists of GSM Modem, Digital Input/Output, Alternating Current to Direct Current Converter (Ac/Dc), 240 Volt Alternating Current Relay and High Rupturing Capacity Fuse (HRC). Maestro Heritage firmware and Tera Term Configuration Software is used to configure and setup the modem. In this system, the status of the HRC fuse is monitored using the signal 1 that is tapped before the fuse and signal 2 that is tapped after the fuse and connected to a 240 volt alternating current relay to monitor the power supply status. If the signal 1 and signal 2 does not match in the event of fuse malfunction, the GSM modem will trigger an alert message to the mobile number that is stored in the GSM program. This monitoring system can be applied in power service industries where it can continuously monitor the fuse installed towards industrial and household consumer and promptly trigger alert notification in event of fuse malfunction. In the existing system, consumers have to report any breakdown event towards power service providers before any action on investigating can be done. This slows down the response on repairing fault hence loss in revenue and blemish in supply reliability.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

The need of electricity has been more demanding in this decade where constant and reliable supply of electric is a necessity in everyone. Every consumer appliance is highly dependents on electricity therefore high expectations of supply reliability are needed. A breakdown in supply can only be tolerated in a minimal time and a fast response is a major aspect in doing so. In order to cater these needs, we propose an automated low voltage fuse monitoring system.

There are available system that currently depended on with only given certain feedback such as measuring voltage and current or locating fault cable but none have the capabilities on triggering alert message via GSM when fault occur[1],[2],[3].

The main focus of this project is to monitor the status of the fuse in the LV power line, since it is most crucial components used to isolate and limit the fault current.