

**BUSITEMA  
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*Pursuing Excellence*



**FACULTY OF ENGINEERING**

**DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING.**

**DESIGN AND CONSTRUCTION OF AN AUTOMATIC MACHINE OVERHEAT  
DETECTION WITH A GSM AND ALERT SYSTEM.**

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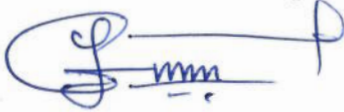
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*A final year project report submitted in partial fulfilment of the requirement of the award of a  
diploma in industrial electronics and electrical engineering of Busitema University*

**JANUARY, 2021**

**DECLARATION**

I Wokhanya Jorem and Namanya Paul declare that the work presented in this project report is our own work and has never been presented to any University or higher institute of learning



Signature.....

signature..... *ciid*

Date..... *28<sup>th</sup> 10/1/2021*

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**APPROVAL**

This final year project proposal report has been submitted to the Department of Electrical and computer Engineering for examination with approval from:

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Signature: .....

Date: .....

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## **LIST OF ABBREVIATIONS**

LCD                      Liquid Crystal Display

PCB                      Printed Circuit board

## **ABSTRACT**

Malfunction or failure of mechanical, electrical and electro-mechanical equipment, for example equipment used in manufacturing operations, is often preceded by an increase in the operating temperature of at least some portion of the equipment. A temperature-sensitive, active material-containing actuator is pre-selected to operate at a pre-determined temperature indicative of impending equipment failure and placed contact with the equipment. If the equipment achieves the pre-selected temperature the actuator signals this by displaying a flag or providing some other passive visual indication.

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## CHAPTER ONE: INTRODUCTION.

### 1.1 Back ground of the project

Modern manufacturing operations and other operating devices use many types of equipment that are subjected to loads that cause heating in portions of the particular machine or unit. Sometimes the heating occurs in electrically powered equipment, such as electric motors, welding transformers, Generators, and welding guns. The heating may also occur in equipment such as gear boxes and machining equipment that experience frictional loading. Often the equipment is used in circumstances that make maximum use of its design capabilities and may result in substantial heat generation within a particular heavily loaded, manufacturing unit. Further, the equipment may be expected to operate with minimal operator attention or oversight.

Thus, there is a need for inexpensive and low energy-consuming devices that may be adapted to function autonomously as a temperature monitor, providing an overheat signal or over-temperature signal, for the particular environment of many different machines used in manufacturing or other operations. There is a need for such devices to fit, non-obtrusively, on or in thermal contact with the equipment, or within the equipment, and to give a visible warning signal if, or when, some portion of the equipment reaches a temperature that indicates that it is overheating, which is likely to be harmful to its continued operation.

This invention provides devices that are adapted for placement on (or in thermal contact with) a surface of an operating unit of equipment, machine, or the like, for the purpose of raising a visible, tabular, warning flag when the operating machine unit is experiencing overheating. The up-standing warning flag is sized and located to inform nearby operating personnel that the operating unit is in danger of being damaged by its overheated condition.

### 1.2. Problem statement

In traditional system, various machines have been heating up in industries and factories due to over voltages which causes rise in temperatures of the machine hence causing damages in the industry

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