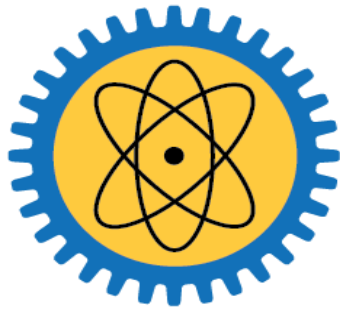




**BUSITEMA
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FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

BACHELORS OF SCIENCE IN ELECTRICAL ENGINEERING

FINAL YEAR PROJECT REPORT

**“MODIFIED VARIABLE FREQUENCY DRIVE THAT CONTROLS TWO MOTORS AT
INDEPENDENT SPEEDS AND DIRECTIONS IN INDUSTRIES.”**

BY

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A final year Project report submitted to the Department of Electrical Engineering in Partial fulfillment of the Requirement for the award of a Bachelor of Science degree in Electrical Engineering of Busitema University.

DECLARATION

I hereby declare that the project report has not been in any case duplicate to submit to any institution or university for the award of any degree or recognition to the best of our knowledge other than me.

This project report is done in partial fulfillment of the requirements for the award of BACHELORS DEGREE IN ELECTRICAL ENGINEERING of our curriculum.

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APPROVAL

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ACKNOWLEDGEMENT

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DEDICATION

I dedicate this report to my beloved mother Mrs. Nampewo Regina, my sister, brothers and relatives and thank them for their extra ordinary help, advice and support.

I also dedicate it to all my class mates of electrical engineering, for they are really a great blessing to me.

ABSTRACT

In this project report, the design and implementation of a modified compact frequency drive that controls two motors at independent properties scheme based on sinusoidal pulse width modulation (PWM) technique for a single-phase induction motor. Our main aim is to design, implement and program a circuit drive that controls two motors each with independent commands from the Programmable Logic Circuit (PLC) to alter the speed, direction and starting time for each motor unlike the previous designs which control a single motor with some characteristics.

This report is intended to provide a basic understanding about VFD terms, VFD operations, Power Factor improvement,

This project was designed using Altium Designer Software and simulated using Proteus software.

This variable frequency drive technique to be implemented is mainly focused in industrial applications, lifts so as to provide accurate operation of motors with improved power factor to minimize power usage and maintenance costs.

LIST OF ACRONYMS

AC	Alternating Current
BJT	Bipolar Junction Transistor
CSI	Current Source Inverter
DC	Direct Current
IGBT	Insulated Gate Bipolar Junction Transistor
MOSFET	Metal Oxide Semi-conductor Field Effect Transistor
PLC	Programmable Logic Controller
MCU	Microcontroller unit
STO	Safety Torque Off
VFD	Variable Frequency Drive
VSI	Voltage Source Inverter
PCB	Printed Circuit Board
PWM	Pulse Width Modulation
THPWM	Third Harmonic Pulse Width Modulation
SWPWM	Sine wave Pulse Width Modulation
SVPWM	Space Vector Pulse Width Modulation

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