PROTECTION OF THREE PHASE INDUCTION MOTOR

Final Year Project Report

Supervised by

Mr. ASIF HUSSAIN

(ASSISTANT PROFESSOR)

Presented by

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DEPARTMENT OF ELECTRICAL ENGINEERING

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A thesissubmittedinfulfillmenttotherequirementfortheaward ofthedegreeof bachelors in electricalengineering
Session 2009-2013

DepartmentofElectricalEngineering
School of Engineering
UniversityOf Management andTechnologyLahore

Approved by
ASIF HUSSASIN

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Ourfellowfriendsshouldalsoberecognizedfortheirsupportatvariousconditions. Theirviewsand tipsareusefulindeed .itisnotpossibletolistallofthem inthis limitedspace.

Abstract

Over last 50 years ago, a revolution has occurred in the field of power electronics and microcontroller that provides solution to all the problems related to power control and logical control. Due to this revolution it becomes very easy to protect the motor from We use step down transformer which step down 220V AC to 12V AC. These 12V are rectified by using bridge rectifier .this rectifier gives pulsating dc output which we convert into pure dc by using capacitors .this pure 12V DC is converted into 5V DC by using regulator as controller operate on dc .we use three voltage transformers which take 220V input from three phases individually and convert them into 12V. These 12V are rectified by using bridge rectifier. The pulsating Output of bridge is purified by 100uf capacitor to pure DC and applied to variable resistance which send variable Input to microcontroller then controller gives signal to relay.

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List of symbols

Angular speed	ω
Angular acceleration	α
Torque	τ
Current	I
Magnetic field flux	B
Voltage	E
Speed	N
Angle	θ

CHAPTER N0 1INTRODUCTION

1.1-Introduction

Induction motors account for half the electric power consumed in our country they are very important part of industrial company. Loss of motor means you cannot produce the goods which in turn does not allow you to make any money. Our project involves protecting the motors that other parts of the system are not affected or that you stop the motor from causing more damage to itself.

1.2-Problem statement

While protecting the motor from over current, overheating, overvoltage, under voltage, the circuit needs the following condition must be satisfied otherwise it may damage the whole system.

- The regulator used must give fixed 5v DC
- Microcontroller used (pic16f877A) must be given DC 5v as it works on DC
- The noise and pulsation must be eliminated by using capacitors
- For larger loads a small relay energize the big one otherwise it will damage the relay as well as the system

1.3 Purpose

Purpose to make this project is to protect the motor from the following faults that may use serious harms for the whole system

- Over Current
- Over heating
- Over voltage
- Under voltage

1.4-Scope

Over last 50 years ago, a revolution has occurred in the field of power electronics and microcontroller that provides solution to all the problems related to power control and logical control. Due to this revolution it become very easy to protect the motor from the above mentioningfaults

- Over Current
- Over heating
- Over voltage
- Under voltage

These faults may cause damage to our expensive system so these faults cannot be happened.

At the completion of this project we will be able to protect the system from the above mentioned faults

1.5-Block Diagram

Asit is very much that we use three voltage transformers which take 220V input from three phases individually and convert them into 12V. These 12V are rectified by using bridge rectifier. The pulsating Output of bridge is purified by 100uf capacitor to pure DC and applied to variable resistance which sends variable Input to microcontroller. We also used temperature sensor to sense the heat het from overheating.