

Abstract

Power controller converts fixed mains voltage directly to variable alternating voltage without change in frequency. Three phase power controller used in various application like speed control of poly phase induction motor, Industrial heating, electroplating etc. The voltage controller can be control by discrete component, micro controller and PLC. Controlling with Discrete component has slow response, bulky size which required more space, accuracy and reliability is less, maintenance is very difficult and its cost is high. Once it configure for one application it is very difficult to change it for future use. That of with Micro controller required complex programming and very skilled person for maintenance. It has very few user friendly features so for changed application we can not used same microcontroller or we can not change it for further requirement. The Programmable logic controller (PLC) is an important component in most modern automation and process control systems today. The Programmable Logic Controller is a special purpose digital computer designed to control machine or process operations by means of a stored program and feedback from input/output field devices. It is composed primarily of two basic sections: the Central Processing Unit (CPU) and an Input/Output (I/O) interface.

By using PLC to control the power Controller Reliability and accuracy are increases and the maintenance and its maintenance cost is reduced, Programming of PLC is very easy and any person who knows the relay logic can do programming. Ones PLC programmed for specific application it is possible to reprogram it for any modifications only by made change in the program. So PLC has many user-friendly features.

This project was undertaken in order to explore the application of Programmable Logic Controller (PLC) in controlling of Three Phase Power. An effort is made to exploit the advantages of PLC to improve accuracy and efficiency of the solution. In future I will do Heat sink Design of Thyristor, Sunber circuit design, Current Sensing circuit design, Fabrication of Synchronization circuit, Temperature Sensing Circuit, Current Sensing Circuit, programming of PLC to trigger Thyristor and its implementation with hard ware.