Abstract
This report describes the design and implementation of the Microcontroller Based Poly House Controller. The system provides an ability to monitor Temperature, Level, Humidity and Moisture contain in soil. The heart of system is 89CSLmicrocontroller. This is embedded microcontroller chip which has computer processor with all it support function (clock and reset), Memory (both program and data) and I10 (including bus interface) built in to device. These built in function minimize the need for external circuits and devices to be designed in the final application. The system works with 5Volt DC power supply

Keywords: Microcontroller, Rectifier, Regulator.

1. INTRODUCTION
A Poly house is a framed structure covered with a transparent material in which crops could be grown under the conditions of at least partially controlled environment. Poly house types are,

1. Partially Controlled: In this open ventilator is used cooling is effected to ventilation
2. Completely Controlled: In this ventilator is not provided. Temperature is controlled with exhaust fan, Computer is used as controlled unit. But in our system is made fully automated, in which the parameter like temperature, humidity and moisture can be controlled therefore this system is very useful for crop grown in poly house

2. EXISTING SYSTEM
There are not so many automated poly house systems. Those are automated have to be interfaced to the computer for controlling purpose. These systems give increased system flexibility and can perform various data manipulation, but, with increase in complexity in their design and operation. The cost for them is high and size is big too.

3. OUR SYSTEM
Our system is very compact and handy which makes the complete system weightless and portable. The unique feature of microcontroller gives all the flexibility of incorporating features of digital gates in a single IC with the help of logical programming.

3.1 Technique Used
A Moisture sensor, specially designed to sense the amount of water content in the soil, also called the "Gypsum sensor" provides moisture content information in terms of change in resistance. This change in resistance is used to provide a proportional change in analog voltage within certain voltage limits. The signal can then be covered to digital form, so as to be processed as per the systems requirements with the use of microcontroller. The software burned within the microcontroller then can control a valve. A set of valves, that in-turn controls the water supply to the field to maintain the soil moisture condition within present limits, they also control temperature and humidity within set limit.

3.2 System Description
Block Diagram of Micro-Controller Based Poly House Controller. Fig. 2.1 Block Diagram of Embedded Microcontroller Based Poly House Controller
4. SYSTEM OVERVIEW

4.1 Sensor and Signal Conditioning

This block consists of the sensors and signal conditioning circuit for the Temperature, Level, Humidity and moisture measurement. The sensors and signal conditioning block will convert the physical quantity into an analogous voltage.

4.2 Analog Multiplexer

Multiplexer is many in to one. It receives 8 inputs at a time and given one output.

4.3 Analog to Digital Converter

Analog to digital converter is a very common need in application design. Temperature, Level, Humidity and moisture are physical quantities. These physical quantities are converted to electrical form by using sensors, but these electrical signal is analog therefore we need an ADC to translate the analog signal to digital numbers so that the microcontroller can read them.

4.4 Microcontroller

The microcontroller is the basic controlling device to control the complete system with the help of software burned into it. This takes key inputs from keyboard matrix, displays key on LCD, accepts digitally converted analog data signals, compares and activates or deactivates the external relay/solenoid valves connected.

4.5 LCD Module

The LCD allows a better user interface with text massages display in a better manner of system. It displays temperature, Level, Moisture, and humidity.

4.6 Keyboard

Key-matrix is a general purpose matrix of keys to accept the user interface with the microcontroller.

4.7 Rectifier and Regulator

This block is used to supply the D.C. voltage across the circuit. It takes 230 V A.C. power source at 50MHz. This voltage is step-down to 12V with the help of a center tapped transformer of rating 12-0-12 (500mA A). The 12V A.C. supply is then fed full wave rectifier circuit. After rectification it is filtered to give constant voltage in D.C. from. The filtered output rectification is filtered to give constant voltage in D.C. from. The filtered output is given to a voltage regulator as input to produce regulated D.C. power supply at 12V as output. A ziner diode is connected provides a constant supply of 5.1 V.

5. WORKING OF THE MICROCONTROLLER BASED POLY HOUSE CONTROLLER
The microcontroller is the basic controlling device to control the complete system with the help of software burned in sensors are connected to analog multiplexer through signal conditioning block. The analog multiplexer receive all input from signal conditioning at a time and given one output, this is applied to ADC chip. This ADC chip convert analog signal in to digital. The microcontroller continuously monitor Temperature, Level, Humidity and moisture present in the plant and display on LCD module and compares them with user set points. If any parameter crosses and below of set point, the microcontroller control the relay to switch ON or OFF the solenoid valve. The set point is set by using the keyboard.

6. CONCLUSION
With .this we can conclude that the system is best solutions for Poly house controller which required continuous monitoring of soil moisture therefore water management is possible also temperature, humidity management is possible. The design system with automation is working satisfactory as per the requirement. This system helps to supply the water as per their need. It helps in optimum utilization of water for irrigation as per requirement of the crops. Relay is switching device, the microcontroller control this relay to switch ON or OFF the external device. The external device is solenoid valve, Fan /Figure, bulb/ Heater

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