

## **Microcontroller Based Maximum Electricity Demand Controller**

M.U.Bhadane<sup>1</sup>, P.R.Rahatal<sup>2</sup>, K.S.Taskar<sup>3</sup> & A.S.Jain<sup>4</sup>  
<sup>1,2,3,4</sup> (Department of E&TC, KVNNIEER/SPPU, India)

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**Abstract :** This project is to introduce an idea of a controller which it to be operated as a demand controller by using a microcontroller to save the energy of the device to use it as a further savior of consumption of heat and electricity. This project helps us to reduce the certain amount of uncertainties caused by usage of excess amount of device which makes it very mechanical for any human being to use. This project also helps us to increase the market value of the devices having less electrical and mechanical equipments for the operation to be carried out for the industrial purpose. In thermal over load protection system the if the temperature of the transformer is increased beyond the safe value, the transformer quickly disconnected from the system. It is done by the insertion of the control circuit in the secondary winding. This inserted circuit senses the temperature of the transformer and according to the temperature of the transformer it will work. This control circuit again senses the temperature of the transformer and if these temperature is normal then these circuit will connect the transformer to the system.

**Keywords:** Energy saver, protection system, controller, transformer

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### **I. Introduction**

Now a days in each industry there are lot of machineries .For each machine there is separate operator and for them there are lot of complications and difficulties for controlling the machine. If in an emergency to off the supply of the machine which is difficult due to less time to off the supply.

In such a case the operator needs a device which will off the machine very easily our project "ENERGY SAVER" will satisfy above conditions. Our project is to make it easily and in smooth and modern way the main advantages of this system is that it saves energy and also reduces losses in equipment. The disadvantages of this project is not wireless. The future expansion for this project is that it possible for this project to make it wireless.

Same operation is require to stop any component of system. The operator is require to start and to stop the system .Extra power is required to pc operation it will control the devices which are connected to the server computer. Battery arrangement is not provided in case of load shading. This system use to avoided human efforts. This system is using at Hospitals,Prison,any industrial area where automatic operations are required. It can handle the operation of system which is far away from control unit.

Now a days, the system which reduce the man work is very much important everywhere in the world. So, in large firms or companies they have to control the power grid system. By using this type of automation, only one man can able to control the whole LOAD from one place only. It is quite easy in installation and use. Through this, the controller sends the ON/OFF command. It is easy to use as the controller not need to go to the particular place for ON/OFF the LOAD. But we will control load as per requirement and automatically.

## II. System Description

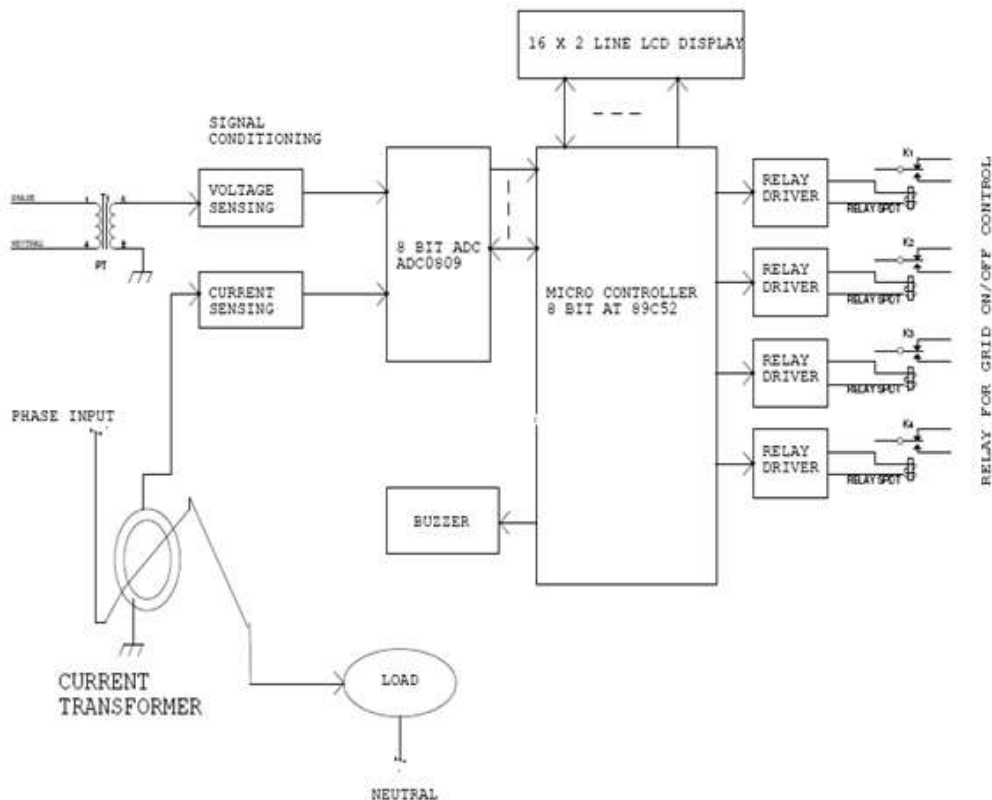


Fig 1.: Block Diagram of system

### 2.1 Block diagram descriptions:

**Potential transformer:** Potential transformer is placed at the starting of the operation which is used for voltage sensing. It is a step down transformer.

**Current Transformer:** Current transformer used for current sensing. This Device is mainly used to monitor the current.

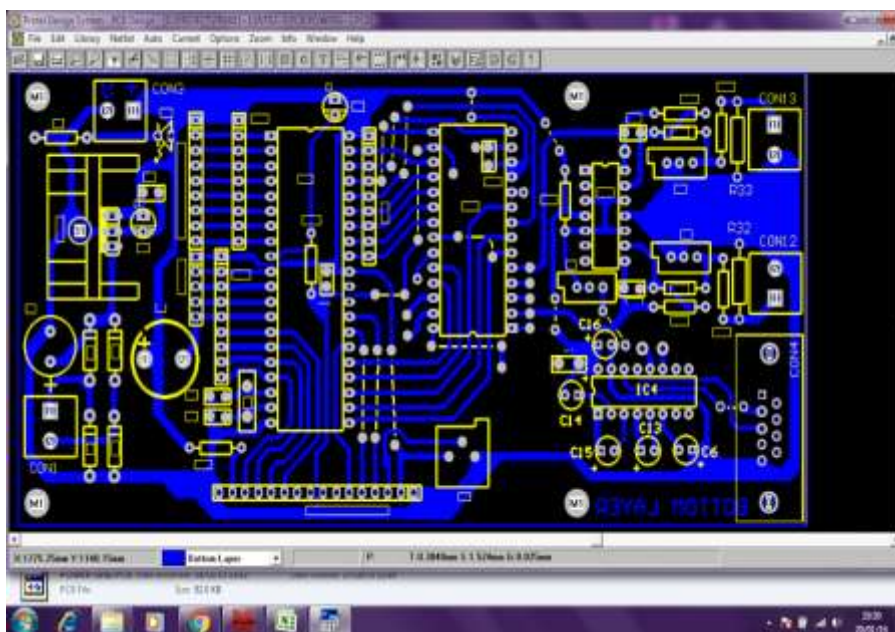
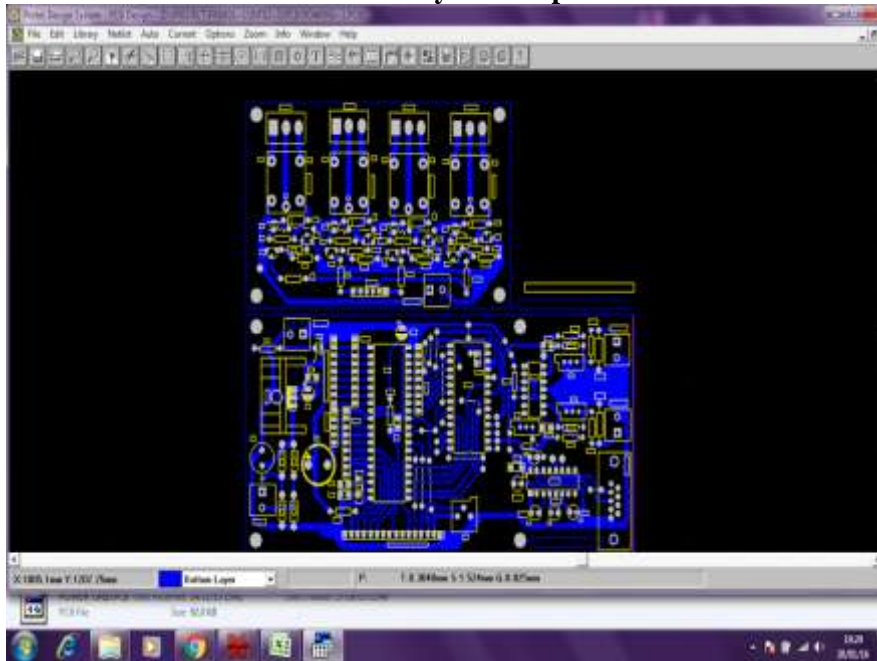
**Signal Conditioning:** In signal conditioning there are two blocks one is voltage sensing device and other is current sensing device which are completely operated as signal conditioning device. Signal conditioning required voltage level shifting because ADC can not understand negative waveform.

**ADC (0809):** ADC convert analog signal into digital signal because ADC don't understand negative signal. This signal given to microcontroller.

**Microcontroller 89C52:** Here we are using 89C52 microcontroller which is the heart of the project. We are using this microcontroller because it is having 8kb memory and which is enough for this application.

**LCD:** LCD 16\*2 display is used to display the status of voltage and current. It works on +5V supply

### III. System Implementation



### IV. Conclusion

Design such a project and implement it, we gather great practical experience. We tried to implement our theoretical knowledge successfully. This course teaches us about the far difference between theoretical and practical knowledge.

This project increases our ability to work as a group and it helps us in future life. But we face several problems because of unavailability of quality goods, technical support and inexperience. In this dynamic world this project helps us to reduce the certain amount of uncertainties caused by usage of excess amount of device which makes it very mechanical for any human being to use.

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