

Energy Saving Using Dual Meter

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Abstract: *Since human evolution, mankind has exploited naturally available resources such as Wind, Water & Solar energy. The availability of resources restricts the use of Wind and Water energies as alternative power sources. But Sun is available since birth of solar system and will remain there as single infinite energy source. There are some hopes that the sun will become a main source of energy in the 21st century. By then, sources of oil will be almost exhausted and will only play a minor part in the supplying of energy. The present interest in solar energy is therefore not surprising. Some work has already been done with solar cells and solar panels*

Keywords: Keil Compiler uVision 3, Embedded, WLPRO Programmer

1. Introduction

Most of the energy that we get from the greatest reservoir of energy, the Sun, remains unused. The only way to store the Energy from the sun is to convert it into electrical form and then using this electrical signal to charge batteries and thus store the energy in chemical form. For this we make use of solar panels consisting of solar cells. The energy saving using dual meter it is very useful for public sector. Our project aim is to effective utilization of solar energy for home and if battery gets full charged then the solar energy will be transferred to KEB. This project implements a new feature which is not yet been implemented in the real time market. As now we know how the solar inverter or solar charger works, when solar energy falls on to the solar panels then it induces electricity and the energy is stored in the battery, later that energy is being utilized for running the home appliances. When battery is fully charged then the next stage is to shift the charging point or the power line towards the grid or Electricity board so that wastage can be minimized and the power can be delivered to the EB

2. Methodology

This project implements a new feature which is not yet been implemented in the real time market. As now we know how the solar inverter or solar charger works, when solar energy falls on to the solar panels then it induces electricity and the energy is stored in the battery, later that energy is being utilized for running the home appliances.

Now the condition is, if the battery which is used to store the charges, if it gets charged earlier time then rest of the time when sun is available and solar panel which is generating the charges are not utilized as the battery is fully charged. So to utilize this energy without wasting it anyways we have designed this project.

When battery is fully charged then the next stage is to shift the charging point or the power line towards the grid or Electricity board so that wastage can be minimized and the power can be delivered to the EB.

By delivering the power to the EB we can save maximum power and we can have mini power generation plant in the local station. And even every individual can earn by lending the power to the EB, this will be motivation for each individuals to adopt this technology and serve the country

for a new future. This project monitors how many number of units we are transferred to the EB and what is the total amount the EB has to pay.

I. Hardware Technology consists of:

- 89C51 Microcontroller.
- LCD.
- Solar panel.
- Relay Driver.
- Resistors & Capacitors.
- LED'S & Crystals.
- Transformer.
- Comparator.
- Voltage Regulators & Push Buttons.

Software Technology consists of:

- Keil Compiler uVision 3
- Language: Embedded C or Assembly
- WLPRO Programmer.

3. Block Diagram

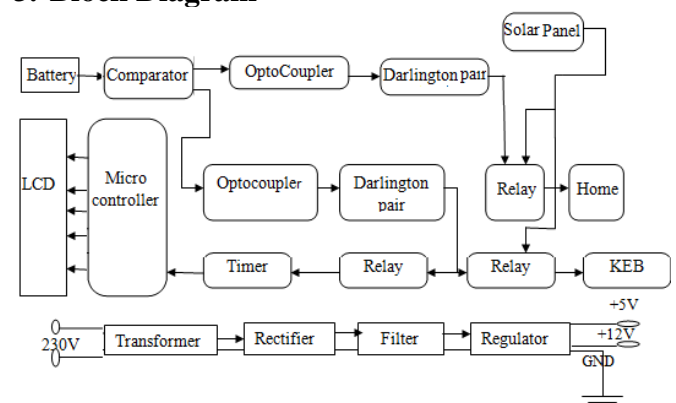


Figure 1: Block diagram of Dual Meter

4. Conclusion

As this project is based on micro-controller (89C51). Integrating features of all the hardware components used have been developed in it. Presence of every module has been reasoned out and placed carefully, thus contributing to the best working of the unit. Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented. Thus the project has been successfully designed and tested.

References

- [1] V.M.Prajapati, K.H.Thakkar, Determination of Energy Produced By Wind Mill on Running Vehicle ,Vol. 3, Issue 1, ISSN: 2248-9622
- [2] Nikhil Kumar Jain, V Aravind, Eranki V S Krishna Prasad, Y Kalyan Chakravarthy, Virtual Prototype of Mechanical Hand Crank Mobile Charger, IJITEE, ISSN: 2278-3075, Volume-2, Issue-2.
- [3] S. John Aruldoss, M. S. P. Subathra, Renewable Energy Hybrid Powered House For Rural Electrification, IJERT, Vol. 2 Issue 3, ISSN: 2278-0181
- [4] William Hayt, Jack Kemmerly, and Steven Durbin, Engineering Circuit Analysis
- [5] M.S.Varadarajan.,Coin based Universal Mobile Battery Charger, ISSN: 2250-3021 Volume 2, Issue 6 (June 2012), PP 1433-1438
- [6] Zahedi A. Technical analysis of an electric powersystem consisting of solar PV energy, wind power,and hydrogen fuelcell, Universities PowerEngineering Conference AUPEC;2007, pp. 1-5.