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Automatic energy monitoring system

Absract

The energy monitoring system is a system that measures utilization of power in normal interims and allows that data to be accessible to its partners by a system interface. The energy monitoring system allows the likelihood to give prompt feedback on an individual's power utilization which saves the work of reading the values from the meter, supports the introduction of time-based energy tariffs, increases the grid state awareness, and conceivably supports a fast access for turning the power flow on/off. The present energy monitoring systems have several problems just like problem of payment collection, energy thefts, quality of photographs that is printed on bill etc. because of which the current billing system is not reliable, expensive, and slower. The traditional billing system has odds of mistakes and it also takes a lot of time. To overcome these problems, the system consists of a current sensor, Atmega328 microcontroller, LCD module and a status LED. The entire system runs on a 9V battery supply. The nature of the sensor's output is analog which is then transformed into digital with the aid of pre-built analog to digital convertor in the microcontroller. The output of the entire system is displayed on the LCD display which is connected to the microcontroller. In order to measure the current of the desired device, the device is plugged in the extension that is connected with the sensor. The conclusion is drawn that the developed energy monitoring system in this research is capable of measuring current of appliances with the efficiency of 99% with the help of ACS712 hall-effect current sensor.