AN ON-LINE PRE-PAID ENERGY METER

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Introduction

Indian power sector is facing serious problem of lean revenue collection as against energy supplied due to energy thefts and network losses. All the steps taken so far, regarding the improvement of the revenue collection did not yield satisfactory results. It is reported that the most faulty sub system is the metering and meter reading system.

The traditional billing systems are discrete, inaccurate, costly, slow, and lack flexibility as well as reliability. Therefore, several attempts were made to automate the billing systems. Even though accurate and fast readings are obtained, bill payment is still performed based on the old billing procedure. They require an individual/agent to physically come and take down the readings and report to house hold/office the amount one has to pay.

Objective

To understand, analyze, design and develop an on line pre-paid energy meter which provides both the suppliers and the consumers with better services regarding meter billing and payment.

Methodology

This is a very good microcontroller based application. This unit will accept the number of units recharged by the concerned department person, counts the number of units consumed by the customer and as soon as the customer exceeds the recharged amount, it will disconnect the power supply to the customer until the next recharge.

Whenever the number of units in microcontroller becomes zero microcontroller sends a signal to “Contact Maker /Breaker circuit” which is nothing but the relay and this relay cuts off the power supply to the consumer until next recharge.

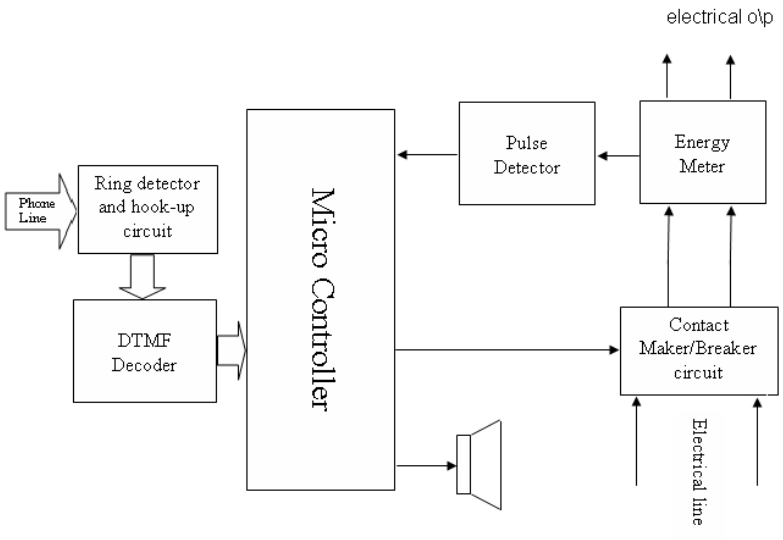

Figure : Block diagram of on line pre paid energy meter

Conclusions

An attempt is made in this work to develop a system, which when interfaced with static electronic energy meter works as an online prepaid energy meter. The consumers and the suppliers can be benefited by using the online prepaid energy meter in the following ways

- This system is of great advantage for the electricity department as this unit can be utilized effectively for preventing power theft, non-payment of electricity bills etc.
- The whole process of billing can be centralized.
- Cost of manpower for billing / collection is reduced.

Scope For Improvement

- The system can be made more user friendly by using smart card technology.
- Further work can be done in reading the consumed energy from energy meter wirelessly using Bluetooth technology.