



Design and Analysis of Electronics Energy Meter by Impedance Variation to Reduce the Power Consumption

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Abstract – A single-phase digital Energy Meter is predicated on microcontrollers. This digital energy meter doesn't have any rotating components. The energy consumption is calculated to consume the output pulses of the energy meter chip and also the internal counter of a microcontroller. As presently because the provide is rebuilt, energy meter restarts with the hold on values. One section energy meter epitome has been enforced to supply measure up to 40A load current and 230V line to neutral voltage. Necessary program for microcontroller square measure written in c-language. Electrical energy meter may be a device that ready to live electrical energy at anybody time. The energy information is incredibly necessary for the study regarding energy demand, particularly in the residential sector. The meters that may be found within the market these days square measure dear as a result of they work on an operation principle that needs the employment of pricey hardware. Hence, a digital meter that may live power consumed by domestic appliances like kettle, television, toaster, et al. has been developed. This meter is powerful, user-friendly and informative enough for the aim of straightforward information gathering. The correct measure of electricity provide and sequent request to residential properties has historically been achieved through mechanical device meters. Though wide used this answer has many disadvantages as well as future accuracy, price of standardization and restricted communication. These problems will be overcome to consume digital power meters wherever it's potential to realize future accuracy by removing analog parts that square measure susceptible to drift over temperature and time. The goal of this project is to style Associate in electronic energy meter that calculates fast power in any respect power issue and provides low-frequency pulse output that is directly proportional to real power. This low-frequency pulse output is more employed by a microcontroller that calculates the energy in terms of Kwh and displays it on a digital display. The perform of the microcontroller isn't solely restricted to show of Energy however it additionally calculates most demand, detects differing kinds of tamper like magnetic tamper, neutral missing, etc., it is RTC, EEPROM, LCD digital display alphanumeric and also interacts with the skin world.

Keywords – Electronic meter, Microcontroller, Impedance.