Abstract

Electrical power meter or KWH meter is often founded on the custumer electric hame. This device count how much electric power that is used every month. But, kwh meter only indicate what level of electric power have been used, so the customer do not know how much cost of electric power he must pay.

That always makes costumer astound when they get a bill of electric cost at the end of the month. Be aware of that, is needed a device which can calculate electric cost automatically.

This device is designed for them with maximum of power 450 W. To counting primer current and primer voltage from PLN used current and voltage transformer. Then output from both, related to signal conditioning, peak detector, and cos phi circuit. In other to their value can be worked, so with microcontroller ATmega 16 which compacted with ADC . after have been trought count process in the microcontroller, then the current value, voltage value, balance of fase value, power value, and cost of electric power can eppearing to the LCD 2x16, in other to more flexible, this device compacted with key pad 4x4 which function as reform electric custumer block. And than compactec with serial communication to personal computer ( PC ).

After testing, this device have error percentage current value 6.20% and voltage value 0.37%. it can influent at power value and electric cost. Arising out of the current transformer rasio not linear. To get current value more presicion, advisable use the current censor.

Keywords: ATmega16, peak detector, signal conditioning
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