

PREPAID ENERGY METER USING GSM AND ARDUINO

AIM:

Design and development of Prepaid Energy Meter using GSM with Arduino.

PURPOSE:

Energy meters are more important to read power consumption of home, offices and industries. But all existing Energy meters are static and wattage information displayed on on display of Energy meter. Wireless and remote kind of energy meters are helpful to monitor from remote places. Prepaid recharge and consuming power is very comfortable. User can recharge when needed. There is no such kind of energy meters used in our country wisely due to cost ineffectiveness. Here we have solution that Prepaid Energy Meter Using GSM.

DESCRIPTION:

This project includes GSM (Sim800c) module, which is connected to Arduino through UART interface. Energy Meter signal taped through optocoupler to Arduino digital IO pin. Energy Meter gives signal through LED while calculating wattage. In this project we are considering LED signal as unit. Energy Meter output load controlled through relay which is connected to Arduino through digital IO pin.

WORKING:

By default Arduino has some amount which is hard coded. When load ON power calculation starts and units will increase. For each unit one rupee amount will decrease. For every three units SMS will upload to mobile number through GSM (sim800c) module. If amount reach minimum then it will send notification SMS. User can recharge amount from mobile SMS.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM	:	SIM800C
Energy meter	:	Single Phase
Buzzer	:	5vDC
Relay	:	12v DC Coil type
Power Source	:	12v 2 amp Adaptor

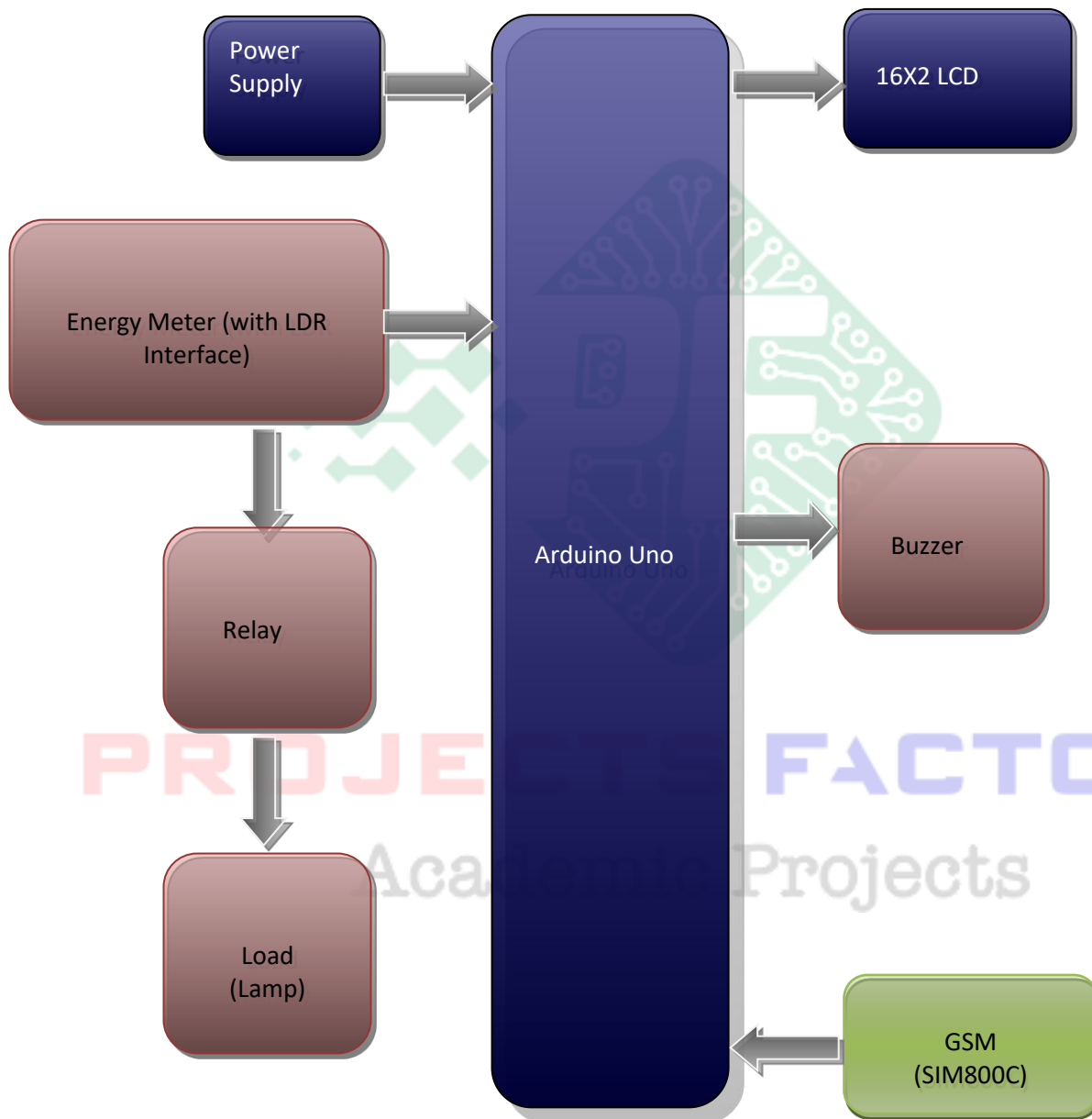
SOFTWARE:

Arduino IDE
Proteus based circuit diagram

APPLICATIONS:

- Home purpose
- Electricity Department
- Industries

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered GSM (SIM800C) module interfacing
- Energy Meter and relay interfacing

PROJECTS FACTORY
Academic Projects