SOLAR POWER CHARGE CONTROLLER

ABSTRACT

The solar energy is converted to electrical energy by photo-voltaic cells. This energy is stored in batteries during day time for utilizing the same during night time. This project deals with a controlled charging mechanism which over charge, deep discharge and under voltage of the battery.

In this project a solar panel is used to charge a battery. A set of op-amps are used as comparators to continuously monitor panel voltage, load current etc. Indications are also provided by a green LED for fully charged battery while a set of red LEDs to indicate under charged, overloaded and deep discharge condition. Charge controller also uses MOSFET as power semiconductor switch to ensure cut off the load in low battery or overload condition. A transistor is used to bypass the solar energy to a dummy load while the battery gets fully charged. This protects the battery from getting over charged.

Further the project can be enhanced by using microcontroller and GSM modem to communicate the status of the system to a control room via SMS.

BLOCK DIAGRAM