**UNIPOLAR INVERTER**

**ABSTRACT:**

An inverter is an [electronic circuit](http://en.wikipedia.org/wiki/Electronic_circuit)s for converting[µdirect current](http://en.wikipedia.org/wiki/Direct_current) (DC) to [alternating current](http://en.wikipedia.org/wiki/Alternating_current) (AC). Inverters are used in a wide range of applications, from small [micro](http://en.wikipedia.org/wiki/Switched-mode_power_supply) [switched power supplies](http://en.wikipedia.org/wiki/Switched-mode_power_supply) for a computer to large micro utilities applications to transport bulk power. This project contains details of the design and construction of a modern 3000W dc to ac inverter. The system consists of the main inverter stage, the charging unit and the overload protector. These units are further subdivided into different stages. The main inverter performs the basic operation of converting the input DC signal from the battery into an AC signal. It then amplifiers the AC signal by the use of transistor MOSFET drivers and then step-up the signal to the require power by the use of step-up transformer. The charging unit contains an automatic switch that transfers the battery from supply to charge when it senses supply from mains. Lastly, the overload protector is a thermal detector that determines the heat generated by the step-up transformer. This heat is directly proportional to the current drawn from the transformer and thus to the load.

**BLOCK DIAGRAM:**

STEP UP

TRANSFORMER

LOAD

MOSFET DRIVER

DECADE IC

