

FARMER FRIENDLY SOLAR BASED ELECTRIC FENCER FOR RURAL AGRICULTURE

(Protects the Farmers' Crop from Wild Animals)

Electric fences can be used to protect farmhouses, farmlands, forest bungalows, etc from animals. In a way, these simulate the job of a cowboy or forest guard. Already popular in countries where manpower is expensive, electric fences are slowly becoming popular in India as well. These control the animals by giving them a short, sharp but safe shock that teaches them to stay away from the fence. Thus electric fences are economical and practical solutions to maximize field production through controlled grazing. Electric fencing is safe, as its output is discrete (not continuous). There is certain time duration between two pulses that prevents prolonged shocking to animals or people. In addition, the short 'on'-time (normally 1/5000th of a second) prevents heat build-up.

This project works on stable multivibrator principle. A free running oscillator is designed to generate square wave and the output is given to push-pull amplifier. This square wave is stepped up to high voltage level and can be connected to the fence.

This fence system is powered by a 12V rechargeable battery. A solar panel is connected to the battery to charge on day time. A normal PN junction diode is used for unidirectional flow of charge current.

The battery also can be charged from house hold AC supply of 230V, 50 Hz. The battery charger circuit is designed to charge the battery with the help of house hold AC supply for emergency conditions. This circuit uses regulated 12V, 750mA power supply. 7812 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/18V step down transformer.

