

Solar Based Electric Fence

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ABSTRACT

Water system framework in Asian nation has given a high need in financial improvement, a few numerous new thoughts are being created to permit horticultural mechanization to thrive and convey its maximum capacity To achieve full advantage of those technologies, we should continually not merely ponder the implication of developing a innovative single technology however should inspect the broader problems for complete development of a system. Implementation of sophisticated Agricultural Solar Fence Security system with fencing circuit fundamentally based is a decent gratitude to prevent misfortunes from creatures been in power all through right now sheltered and secure agribusiness water system. The task water system the board exploitation ATMEGA328P assume to handle the issues of farming area worried to water system framework with offered water assets. Delayed times of dry part climatic conditions because of vacillation in yearly precipitation, may considerably prune the yield of the development.

Keywords— solar based electric fencing; Solar Panel; ATMEGA 328; fencing circuit.

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I. INTRODUCTION

Water system framework in Asian nation has given a high need in financial improvement. A few new thoughts are being created to allow rural mechanization to prosper and convey its maximum capacity. To achieve full preferred position of these advances, we ought not just think about the ramifications of building up another single innovation yet should take a gander at the more extensive issues for complete improvement of a framework. Execution of cutting edge Agricultural Solar Fence Security with fencing circuit based mostly is an effective way to cut off losses from animals is been executed right now protected and secure agribusiness water system..

The task water system the executives abuse AT89S52 is framed to handle the issues of farming area concerning to water system framework with reachable water assets. Drawn out times of air climatic conditions because of change in yearly precipitation, may apparently cut the yield of the development. The costs in setting up a few of those harvests partner in nursing what's more, their relative narrow mindedness to dry season assemble a compelling water system framework a need for beneficial endeavors. In this project we are using AT89S52, Reverse

current protection circuit, fencing circuit, solar panel and Liquid Crystal Display(LCD) to display battery voltage.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is employed for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.



Fig. 1 Solar based electric fencing

II. Methodology System Design

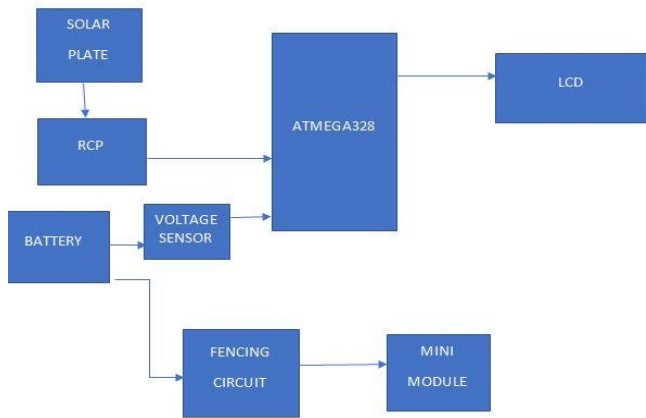


Fig. 2 Block diagram

The figure shows the block diagram of the solar based electric fencing system that is in a position to be hooked up to the fencing module. The system incorporates the ATMEGA328P, Solar panel, fencing circuit, LCD, Reverse current shield on circuit that is in a position to safeguard the agricultural land from wild animal and thefts.

System development

The system encompasses of the ATMEGA328P microcontroller, fencing circuit and a tool known as solar panel.

The microcontroller that's chosen to be used is **ATMEGA328P** microcontroller since it's additional blessings. It includes C compiler optimized designed instruction set, linear program memory addressing up to 32Kbytes and data memory up to fourK bytes. It provides 16-bit wide instructions, 8-bit wide data path, four external interrupt pins with Priority levels, High current sink/source twenty five mA/25mA, four timer modules with eight bit timer/counter, In-Circuit Serial Programming (ICSP) via 2 pins. Figure 3 depicts the PIC microcontroller.

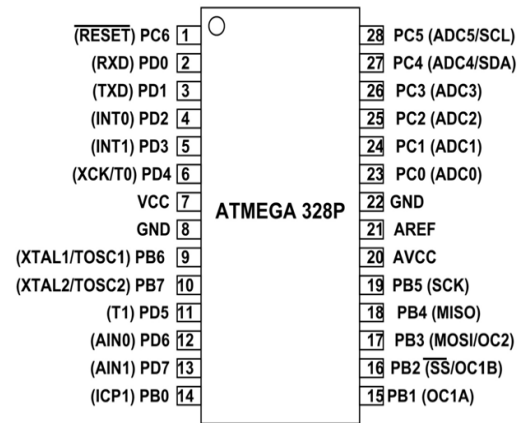


Fig. 3 ATMEGA328P

Solar Panel pumps electricity into battery that's stores it. The charge controller between electrical device and battery regulates the voltage and current and primarily halts charging activity once necessary. Physical phenomenon may well be a packaged connected assembly of typically half a dozen by 10 solar cells. The **Fencing circuit** provision the desired high voltages to the above mesh in essentially becomes the center of the complete procedure. Pertaining to the figure abroad we have a tendency to see that the circuit is essentially created of 3 stages viz. the power supply stage, the generator stage and also the voltage booster stage. Within the **Reverse current circuit** once V_{out} becomes above V_{in} then the reverse circuit stops the current from V_{out} to V_{DD} pin. Usually, the LDO regulator victimization Pch output electronic transistor contains a parasitic diode between V_{DD} pin and V_{out} pin

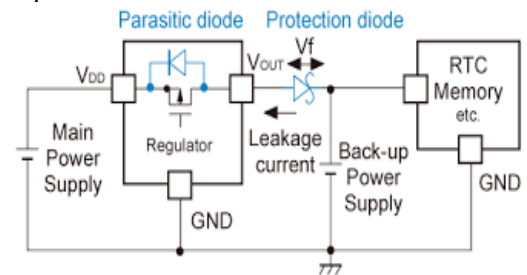


Fig. 4 Reverse current Circuit

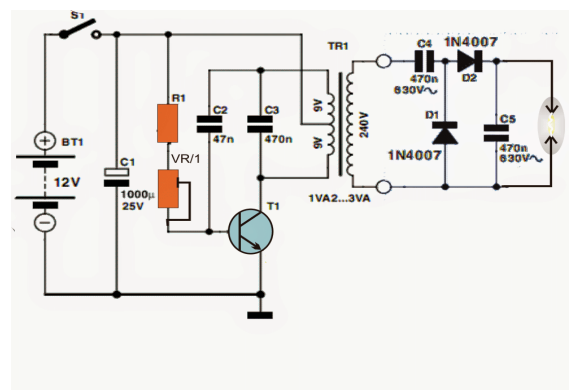


Fig.5 Fencing Circuit

III. Technical specification

1. Fencing circuit- This network pulls the 200V from the electrical device to regarding 600V. As per the winding knowlegde, this voltage could be somewhere around 200V.
2. ATMEGA328P – Eight Bit and twent eight pins AVR microcontroller.It has associate in nursing EEPROM memory of 1kb and its SRAM memory of 2kb,clock speed 16MHz,operating voltage 5v.
3. RCP – Reverse breakdown voltage is 70v, Reverse leak current two hundred micro ampere, forward dip is 0.411v.

IV. Rresults



Fig.5.Hardware set of protecting system.

Fig. 6 Result

V. CONCLUSION

Thus we are concluded the solar fencing system was designed and unreal successfully. The experiment shows that projected system is economical and easy one. We have save value to implement this project security purpose yet as less time consume.