

Automated Street Light System

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ABSTRACT

We need to save or maintain energy because it is impossible to replace most of the energy sources we rely on, such as coal and natural gas. They're gone forever once we use them. Saving energy is very essential; it should be turned off instead of using the power in unnecessary moments. One of the main energy consuming variables in any town is "STREET LIGHT." Most of the moment we see road lights are ON even after sunrise so a lot of energy is wasted. We avoid the issue here by having an automatic system that turns the road lights ON & OFF at a specified moment or when the ambient light falls below a particular intensity. Each controller has an LDR for the detection of ambient light. The lights are switched ON when the ambient light is below a particular value. The pic18f452 microcontroller is interfaced with a light-dependent sensor that is used to track the sunlight and when the sensors go dark the led will be turned on and the led will be turned off when the sensor starts lighting. It obviously shows the transistor's work in the region of saturation and cut-off. Relay work is also known as Microcontroller and the code is written in c language in MikroC ide, the resulting value can be seen using UART or LCD screen. Automatic Street Light Control System is a straightforward yet strong idea that utilizes transistor as a switch.s

KEYWORDS: Microcontroller, Street Light, LCD, Relay

INTRODUCTION

In light / dark sensor circuits, LDRs or Light Dependent Resistors are very helpful. An LDR's resistance is usually very large[1], sometimes as high as 10,000,000 ohms, but

falls dramatically when illuminated with light resistance. In the presence of visible or invisible light, electronic onto sensors are instruments that change their electrical features[2]. LDR is produced by placing a film of cadmium sulphide or cadmium selenide on a ceramic substratum containing no or very few free electrons when not illuminated[3]. The strength reduces when light drops on the strip. The strength may be in the range of 10 K ohm to 15 K ohm in the lack of light and is called the dark resistance[4]. The strength may drop to a value of 500 ohms depending on the light exposure. Microchip produces a sequence of PIC microcontrollers[5]. There are many distinct flavors available, some basic types of low memory, going right up to those built in with Analog-To-Digital converters and even PWM[6]. A PIC microcontroller is a memory and RAM constructed processor that you can use to monitor (or construct projects around) your projects[7]. It thus saves you from constructing a circuit with distinct internal RAM, ROM and peripheral chips. Microchip provides the 8-bit, 16-bit and 32-bit microcontrollers depending on the design engineer's required application specification[8].

CONCLUSION

In this paper we used a PIC microcontroller to study and implement a full working model. PIC microcontroller programming and interference was mastered during execution. In many apps, this work involves the study of energy saving scheme. With Automatic Street Light Controller, we can create Solar Street Light System. The device can be operated from a battery that can be charged through a solar cell during the daytime by collecting the solar energy. It is possible to store the solar energy harvested from sunlight, inverting from DC voltage to AC voltage using a sun tie converter. The voltage of the AC can be increased and transferred to the electrical grid. The electrical grid AC voltage can be stepped down, adjusted and used to power the circuit. In the meantime, the A.C can also power the street light. Voltage regulated by a relay switch linked to the circuit switch. The above-mentioned approach will allow us to harvest solar energy efficiently to operate the circuit as well as to power the street light.

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