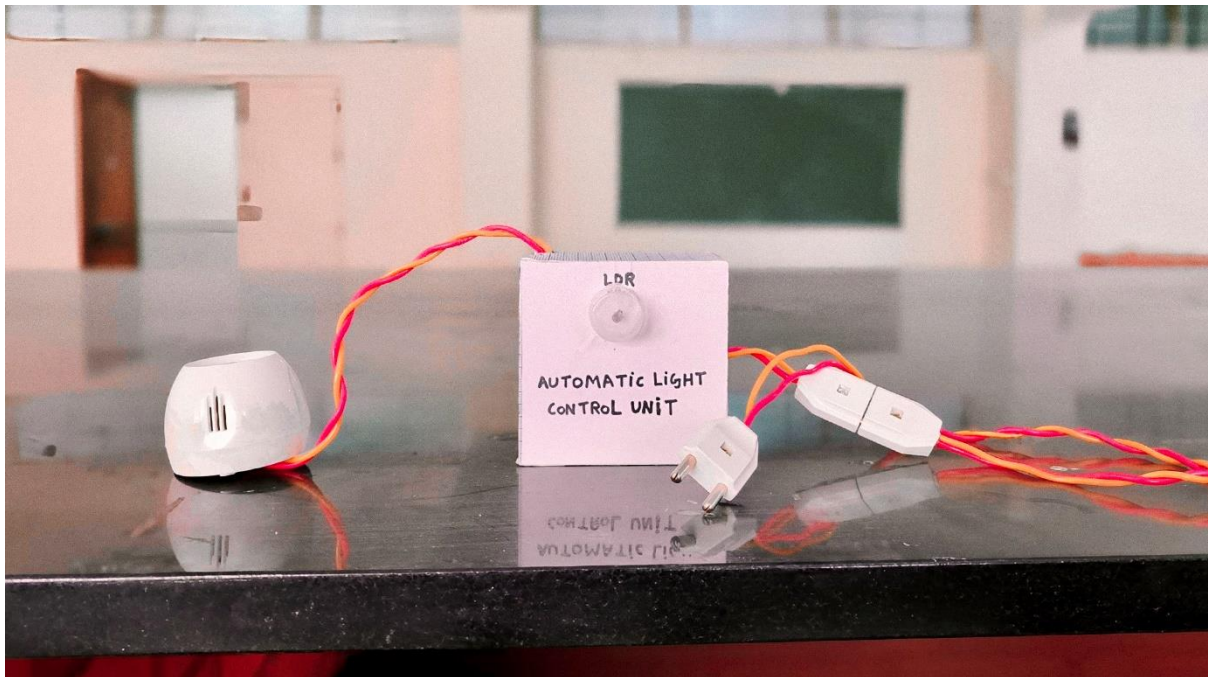


## Automatic Street Light Control System Using LDR, Relay & Power Converter Module



### Automatic Street Light Control System

The Automatic Street Light Control System is an intelligent lighting solution designed to switch street lights ON at dusk and OFF at dawn using an LDR (Light Dependent Resistor). This fully automated system eliminates manual operation, reduces energy wastage, and enhances safety by ensuring lights operate only when needed.

### Overview

This system uses the LDR sensor to detect ambient light intensity. When the surrounding light falls below a threshold during sunset, the system activates a relay to turn ON the street lights. In the morning, when the light level increases, the relay switches OFF the lights automatically. A power rectifier module supplies stable DC power to the circuit, ensuring continuous and reliable operation.

### How It Works

1. The LDR senses the level of ambient light.
2. In low-light conditions (evening or cloudy weather), its resistance increases.
3. This change is detected by the controller/driver circuit, which triggers the relay.
4. The relay switches ON the street light load.

5. During daylight, the LDR resistance decreases, causing the relay to turn OFF the lights.

This automated cycle repeats daily without human intervention.

### **Key Components**

- **LDR Sensor** – Detects ambient light intensity
- **Relay Module** – Controls the street light load
- **Power Convertor Module** – Converts AC mains to stable DC supply
- **Transistor/Driver Circuit** – Amplifies control signals
- **Connecting Wires & Terminals** – Safe and secure connections

### **Applications**

- Urban and rural street lighting
- Campus and parking lot lighting
- Garden pathways and landscape lighting
- Industrial premises lighting
- Smart city infrastructure

### **Benefits**

- Significant energy savings
- Zero manual intervention
- Low maintenance and long operational life
- Cost-effective and reliable
- Works in all environmental conditions.

**Department of Electronics & Communication Engineering (E&C)**

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