

Current leakage detection system using image processing Raspberry pi

<https://www.youtube.com/watch?v=k2NzAgbcugg>

The Current Leakage Detection System Using Image Processing and Raspberry Pi is designed to detect and identify electrical current leakage conditions using a camera-based monitoring system. The system uses an IR camera to continuously capture images of the electrical equipment, while OpenCV-based image processing is implemented on the Raspberry Pi to analyze the captured images and identify abnormal conditions associated with current leakage. The Raspberry Pi acts as the main processing and control unit, receiving camera input. When a leakage or abnormal condition is detected, the Raspberry Pi activates a buzzer driver and buzzer to provide an immediate audible warning. The system can also support web monitoring, allowing the detected condition and system status to be monitored remotely. A power supply and transformer provide the required power to the system and connected load. This proposed system provides a simple, automated, and cost-effective approach for early detection and alerting of electrical leakage conditions, thereby improving electrical safety and reducing the risk of equipment damage.

Features:

- Current leakage detection using image processing.
- IR camera for continuous monitoring.
- OpenCV for image analysis.
- Raspberry Pi as the main controller.
- Automatic leakage identification.
- Buzzer alert when leakage is detected.
- Web monitoring for remote status checking.
- Real-time monitoring and alerts.
- Improves electrical safety.

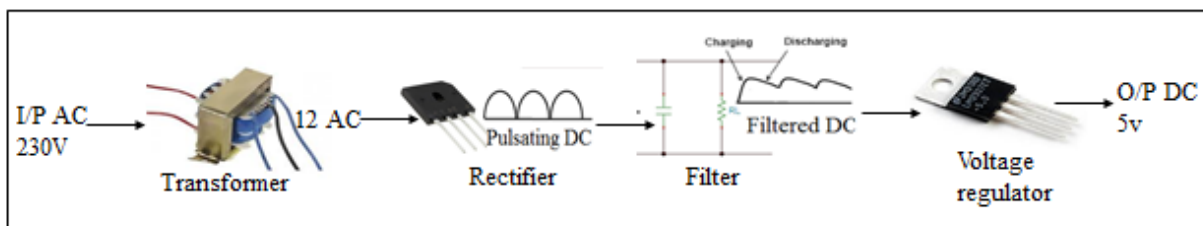
The major building blocks of this project are:

1. Power supply.
2. Raspberry pi.
3. IR camera.
4. LED indication.
5. Transformer.
6. Motor.
7. SD card.
8. Buzzer.

Software's used:

1. Linux OS.
2. Python language.
3. Express SCH for Circuit design.

Regulated Power Supply:



Block Diagram:

