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## Patent Search

Invention Title	OVERVOLTAGE AND UNDER VOLTAGE PROTECTION, NOTIFICATION USING ML AND IOT- BASED SYSTEM.
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## Abstract:

Our Invention "Overvoltage and Under Voltage Protection, Notification Using ML and IoT- based System" is a this invention presents a novel system to protect domestic loads from over voltage and under voltage in AC mains supply. The proposed system monitors the voltage and provides a breakpoint based voltage tripping mechanism and protects the load using Machine Learning. The proposed system consists of a tripping mechanism that monitors the voltage according to the limits provided. A lamp load is used in this research work to test the effective working of proposed system. This invention proposes a device designed to be integrated in smart environments based on Internet-of-Things technologies. The proposed system enhances electrical safety to power supply in case of fault events like leakage current, electrical arc, overcurrent or overvoltage and has been designed with the goal to be integrated in smart homes or smart cities for protecting the electrical equipment. The system also enables real-time monitoring and notification events through a communication interface using a data concentrator architecture. This invention provides an extended description of the proposed system's design and the experimental validation results.

## Complete Specification

### DESCRIPTION OF THE INVENTION

Load decoupling circuit and power supply. For decoupling the load a static SSR module SSP1A125BD Schneider Solid state transfer is utilized, having 300 V AC rating, and 25A maximum current, and for unbiased decoupling we have utilized a hand-off (RLY). Decoupling happens first for the stage and nonpartisan, while recoupling happens in the opposite request. The honesty of the SSR and the hand-off is being checked at gadget fire up and into activity.

The PS power supply is an exchanging MEAN WELL DR-15-12 stock with a 12V DC rating, 1.25A maximum current and 85-264V AC supply voltage. The system is protected against overvoltage by the PSP (Power Supply Protection) circuit, comprising of a resistor associated in corresponding with a triac.

Under typical conditions, when the network voltage is under a most extreme worth, the  $\mu C$  initiates a triac to cut off resistor associated in series with the load. When the network voltage surpasses the greatest worth, the  $\mu C$  deactivates the triac, prompting the resistor being interface in series with the load, circulating the voltage between the resistor and the PS.

At the point when the network voltage gets back to ostensible worth, the  $\mu C$  orders the re-enactment of the triac. Plan and execution insurance was

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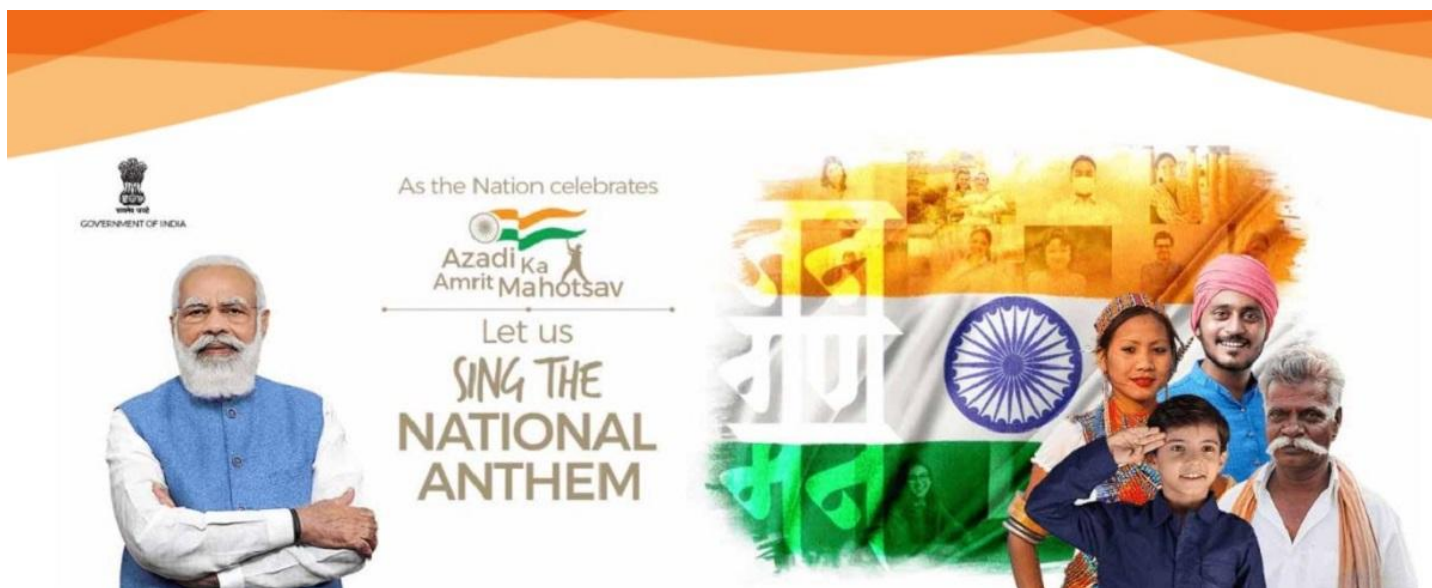
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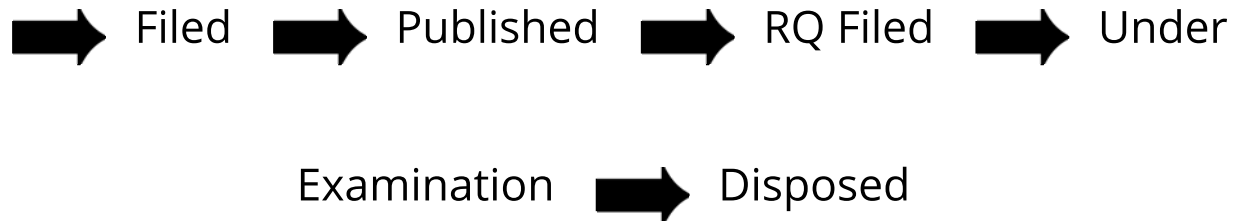
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