Abstract

The aim of this paper is to design and construct an over voltage protection system for a smart home. This system is designed to control the operation of a multi-device according to their priority and the amount of current allowed to be used for each home. The important part of the system is the main control unit, which receives the readings of the devices by using current sensors - one for each device. The algorithm used for controlling the operation of each device is implemented in software using the Visual Basic program, to show the principle of the operating system. Furthermore, the system is constructed on an Arduino microcontroller and several current sensors to measure the current drawn by each device. The same algorithm which is implemented in the software is applied to the microcontroller to save the energy drawn by the devices. The control system designed is tested in several experiments to show its performance.

Index Terms

Computer Science

Circuits and Systems

Keywords

Over voltage system, Current sensors, Arduino microcontroller.