

ABSTRACT

Thunderstorm is also known as a lightning storm, which is one of the nature's most powerful phenomenons. It is also one of the most common and destructive phenomenon. Thus, it is necessary to develop a device that will be able to detect the occurrence of the thunderstorm. So the damage done can be avoid or minimize.

The aim of this project is to build a lightning position detector that is able to detect the presence of lightning strike so that the public can be warned before a thunderstorm occurrence. This device is able to detect lightning position i.e. its distance from this device and direction of the lightning strike.

The main components used in this detector were the PIC 16F877A microcontrollers that acted as the brain to control the whole process. When the presence of lightning is detected by the light and sound sensors that connected to PIC, the ADC that built in PIC read these inputs. The distance of the lightning strike is calculated from delay time between the lightning flash and thunder detected.

The direction of the lightning is obtained by using a direction structure that divides the area into five equal sections and has installed with a light sensor on each section. Finally, both distance and direction's displayed on a LCD display monitor. And the warning system is to be activated according to the reading obtained above.

Overall, the design is detecting lightning strike properly and accurately.