

ABSTRACT

Many times human's behaviors are untidy that are able to danger themselves or even the others, get burn is for example. There are several factors that cause burn; they are human error, the low of product quality of electric devices, short circuit. Concerning in that circumstances, an immediately action is needed before the fire burn everything. Therefore, we need a fire detection that is able to inform about signs of fire quickly and automatic; if detection is occurred by the fire detector, the device will spray water and sound the alarm. So it will give some kind announcement to human that can be known formerly. In this final project, a fire detector and prototype simulation that is able to response a fire with alarm and automatic sprayer is designed and implemented.

The device contents tempearture sensor, smoke sensor, and microcontroller AVR ATMEGA 8535 that control data and does every command that has been programmed before. ADC circuit isn't necessary to be designed because it' has already built-in inside the ATMEGA 8535. System will detect the fire if the environment temperature is more than 53° C and detect the smoke is also occured in the same time, so the device will sound the alarm and spray the water.

The device is tested in four conditions; they are normal, high temperature without smoke, low temperature with thick smoke, and high temprature with thick smoke (burn condition). Based on those four conditions, the device can work properly, if the condition is high temperature without smoke or low temperature with thick smoke, so the device will sound the alarm, and if the condition is high temperature with thick smoke, the device will sound the alarm and spray the water.

Keyword: extinguisher fire, microcontroller, ADC, temperature, smoke