ABSTRACT

A DESIGN AND REALIZATION OF A GROUND SLOPE LEVEL DETECTOR AS THE CAUSE OF LANDSLIDES USING ATMEGA 8535 MICROCONTROLLER - BASED LINEAR POTENTIO SENSOR

by

Shintha Yunia Ulfa

Landslide is a block (mass) slipping against another mass. Landslides could be detected by determining changes in the slope level of the ground. This experiment demonstrated a design and realization of ground slope level detector using ATMega 8535 microcontroller - based linear potentio sensor. The system worked with four units of linear potentio sensors. The sensors were placed in each corner on the top side of the system, so that the sensors were able to detect the slope in four directions. For every change of the system slope, a burden would shift the wire towards the top and the bottom. The wire shift would trigger a change in resistance in the sensors. The output value of the sensors was connected to a voltage divider circuit before entering ADC. Therefore, the output value obtained from the system changed in accordance with the directions and the change in the slope level. Then, the output value were displayed on LCD and was stored in a micro SD. According to the experiment, the tool was capable of detecting change in the slope level measuring from 0^0 to 25^0.

Keywords: Slope, Landslide, Sensors, Linear Potentio