ABSTRACT

DESIGN OF DEVIATION DETECTOR FOR RAILROADS BASED ON POTENTIOMETER SENSOR

By

YULIANA SETIARINI

It has been designed and fabricated a deviation detector for railroads based on potentiometer sensor. The objective of system is assisting an inspection and maintenance railroads in order to reduce the train accidents. Data from the sensor is processed by microcontroller, displayed by LCD 16 x 2, stored on micro SD and sent by *Wavecom* modem M1306B to SMS. Processing and communication of data made by program on microcontroller ATMega32 and the programming language is C language. The signal processing on potentiometer sensor assisted by *Wheatstone* Bridge for calculate the value of resistance in the potentiometer sensor. The results obtained of this object are scrape detector able to detect a shift up to 0,5 mm and has speed of 0,155 m/s. The maximum limit of deviation is 34 mm.

Keywords: *Railroads scrape, potentiometer, microcontroller.*