ABSTRACT

Gantry crane is a tool that used to move heavy loads from one location to another. The transfer process is usually swings unstable as results of cart movements and weights. If the unstable swing occurs constantly, the substandard of the gantry crane decreases. It causes on decreasing the effectiveness of production and time. It is necessary to have a steady flow of cranes under the weight.

In this project, implementation and analysis of the gantry crane movement using the fuzzy logic method was designed. This control system works with input form the absolute rotary encoder sensor and incremental rotary encoder sensors on the gantry crane prototype. The process of information is the output of the dc motor speeds as an actuator in the pulse width modulation (PWM). The final velocity of actuator was processed according to the set point and the changes in velocity are defined from the readings of the second sensor value. Therefore the gantry crane's prototype will be able to achive its equilibrium.

The results of this final project indicate that gantry cranes can maintain the stability of the crane's rope with or without interference. The time needed to reach stability is 1.4 seconds with a maximum amplitude of 3.5 °. prototype gantry cranes using the Fuzzy Logic Controller control method are able to reduce sway that occurs, from the farthest deviation of -17.25 ° in 158.35 seconds to achieve stability to the farthest deviation of -8.09 ° in 3.885 seconds.

Keyword : *gantry crane, anti sway, fuzzy logic controller.*