

ABSTRACT

Forklift is a tool that helps the working man to move goods from one place to another. Forklift that works automatically is one of the supporting components in a warehouse automation system (warehouse). Seeing the importance of automatic forklift in an automation will require a control that supports the automation of work forklift. Perfect solution of this problem is to implement an automatic braking system based on distance, braking DC motor system refers to a decrease in speed. With a gradual decrease in speed from maximum speed to achieve the targets expected to gain maximum performance in controlling a DC motor on a mini forklift.

In this final project will be the design and implementation of hardware and software to realize a forklift that can work automatically. Hardware in the form of mini forklift which includes mechanical systems, electrical systems, ultrasonic sensors, rotary encoder and microcontroller ATMEGA328P. Software programs such as fuzzy logic control is applied to the input parameters of the two ultrasonic sensors and 2 rotary encoder mounted in horizontal and vertical direction as the detection distance. Fuzzy logic is what determines a great Pulse Width Modulation (PWM) DC motor as a speed controller for the motion in the horizontal direction and vertical. menuju storage racks. Set rack position will be accepted from a computer as an interface to the operator via serial communication.

The results of this final project is the hardware works well, ultrasonic sensors, rotary encoder, DC motor, power supply and mechanics. Software interface program can run properly communicate with the microcontroller and fuzzy logic control programs can't work to reduce the speed of a DC motor from maximum speed to slow speed when approaching the target to stop on the right target. either on horizontally and vertically. This is because the system can not move the forklift with good speed, because the L298 drivers have limited output current while the DC motor used has a good performance on 3,5 Ampere and voltage 24 Volts.

Keyword: mini forklift, sensor ultrasonic, rotary encoder, fuzzy logic control