ABSTRACT

The background of this research is to make a control sistem that can control and increase the precision of the speed of a motor and the position of a lift. In order to do that, the author use a speed and position control that is using a PID controller.

In this research, The author use a position control to control the position of a lift and a speed controller to control the rotation speed of a motor that is connected to the system. PID controller is utilized for both speed and position control to minimize the error that occur in the lift system. The setpoints that are used in this controller is the speed of the motor and the position of the lift. The inputs that are used in this system is the height of the lift that is acquired using a ultrasonic sensor and the rotation speed of the motor that is acquired using optocouplre sensor. The data that have been acquired then be processed using Arduino UNO using PID method to get the output that is in PWM. Then that output then be used to spin the DC motor so the lift will go to the position that we have set using setpoint.

In the end, the control system could control the position and speed of the lift but there is an error that still occur.

Keywords : *Lift, Ultrasonic, optocoupler, PID control , Position control, Speed Kontrol, Arduino UNO, Sensor*