

ABSTRACT

Robots are a very developed thing at this time, where large industries are very often founded using robots to maximize their industrial production. Because of that development in robotics is needed because the industry has entered the automation stage. In addition, the use of robots can also reduce the cost of a project because robot only requires inspection and maintenance.

Thus, in this research, a manipulator robot who has three degrees of freedom is made. The manipulator robot will be tested by drawing an image based on the pattern that has been instructed. The manipulator robot is then equipped with sensors that can detect the position and the speed of the manipulator robot so that the stability level and accuracy level of the robot can be measured. The control system used in this robotic arm is a PID control system or a proportional (P), integral (I), derivative (D) control system. In this study, the robot arm is expected to be able to reach the destination point in one movement and can also adjust the speed so that the robot's movement has high precision.

Keywords: *Degree of Freedom, PID, robot manipulator control*