ABSTRACT

A company's success in the industrial field can not be separated from activities related to technology. Therefore, many industrial companies innovate technology to increase their productivity. One technology that facilitates mobility during production is a crane. The usual problem when operating a crane is the emergence of a sway (swing) from the load being transported. Sway that occurs at the crane can result in damage to the goods transported. This makes the industrial company develop the crane to get the appropriate crane.

Anti-sway gantry cranes can be one of the solutions to problems that commonly occur in industrial companies to minimize the risk of damage to the loads carried. This is the basis of this research to overcome sway on the burden to ease the mobility process of the company's production activities.

In this study, the Anti Sway Gantry Crane system was designed using the Proportional-Integral-Derivative (PID) control method to stabilize the pendulum rope angle and cart position. The system designed can also maintain a stable position and angle when disturbed or without interference. The results of testing and analysis of the Anti Sway Gantry Crane system show that the PID control with Kp = 1 and Kd = 8 values for angles and Kp = 0.05 and Ki = 0.01. Systems that do not use anti-sway achieve stability with 82 seconds, while anti-sway systems can achieve stability with 7.8 seconds.

Keywords : *Anti sway, gantry crane, Proportional-Integral-Derivative*