

ABSTRACT

Fluid level control is a control system that functions to regulate the height of the fluid or liquid in a tank. In its realization, Fluid level control is applied as a control system prop in the digital control system practicum. Currently, the props sold by many manufacturers are quite expensive, and the control system is still serial communication. The system runs using PI control with the control principle to regulate the motion of the fluid pump.

From these problems, it can be overcome by applying a PI-based water level measurement system where later the system response to PI control can be seen in the form of the existing water level. To facilitate monitoring of system response, there will be a menu system in the application of tools that are useful for changing the value of either the setpoint, the K_p value as a proportional, or also the K_i value as an integrator in the water level regulation system. It is hoped that this system will have a fast response and high stability.

The expected results from the PI method which has a fast response and high stability so that the values of $K_p = 20$ and $K_i = 1,5$ are obtained as a result of a system that has a high stability value and a lower steady state error value. After the implementation of the system, it obtained an accuracy value of 99,84% which can be said that this system works stably because it has an error rate of $< 2\%$. And with a menu system that can adjust the water level, K_p value and K_i value, it is hoped that it can help to teach how to apply the PI control system in a control system.

Keywords: PI, Fluida Level Control