

ABSTRACT

Clean water is an especially important basic need of the community, the community in general gets a supply of clean water from the local PDAM (Regional Drinking Water Company). Disruption of the water distribution process will certainly lead to a new problem. Water pipe network leaks can cause financial losses for both the community and the PDAM. In general, checking for pipe leaks is done manually. This study aims to produce a tool that is useful for monitoring water pressure in distribution pipes and detecting the location of leaks accurately and precisely.

The detection uses a pressure transmitter sensor by using two pressure transmitter sensors placed before and after the leak point. The system will detect leaks by comparing the pressure on one sensor and another. If there is a significant difference in pressure, it is categorized as a leak. This system is equipped with ACS712 voltage and current sensors which are useful for measuring battery capacity and measuring the current generated by the solar panel as an indication that it is charging. Then the results are sent via ESP8266 to the server. In this final project, it was found that the leak detection system uses a pressure transmitter sensor when the sensor distance is too close, then the system is less efficient in detecting leaks. This is because the distance between the two sensors is too close so that when a leak occurs the pressure on the two sensors drops drastically and has a small difference in value. The system is more efficient in detecting leaks when the two sensors have a large distance difference. Based on the test results by comparing the sensor value with conventional measuring instruments, the average error value obtained is 0.16%.

Keywords: ESP8266, Leak Detection, Pressure Transmitter.