

ABSTRACT

Leakage is one of the factors that causes ruinous effect on Indonesian regional water utility company (PDAM) and take a long time to detect the leakage because of the manual measurement (checked by the officer).

In this final assignment, a tool that can detect the leakage will be designed using the principle of ultrasonic transit time that will compare the transfer time of the upstream signal (μs) with the downstream signal (μs). Those transfer times will be processed on the microcontroller to obtain the discharge value (mL/s). The measurement is carried out on PVC pipe with diameter 1" by measuring incoming and outgoing water discharge (mL/s). The difference between the value will be the leakage indicator.

The output are incoming and outgoing water discharge (mL/s) with power consumption 6,19 Watt. In the scheme without leakage test, the accuracy is 71% for each incoming and outgoing water discharge (mL/s), while in the leakage scheme the accuracy is 66%.

Keywords: water discharge, leakage, PDAM