

ABSTRACT

Water is the most important source of life for humans. The government provides a Regional Public Drinking Water Company (PERUMDAM) to meet these basic needs. In meeting these needs, PERUMDAM uses an electric pump that is equipped with damage protection. However, to control the current electric pump is still analog, so it still requires regular monitoring by PERUMDAM officers.

In this Final Project (TA), a solution to this problem is proposed by designing and implementing an IoT-based Pump Panel. This tool is made with an *Optocoupler* sensor, Power Meter, nodeMCU ESP8266, and Solid State Relay (SSR) as actuators that are directly connected to a real-time database to control and monitor the pump panel in real-time. It is hoped that this tool will make it easier for PERUMDAM officers to monitor all existing water pumps.

In the test, the data obtained from the IoT Pump Panel is divided into two. Data from the *Optocoupler* sensor is used to monitor sensors on the analog pump panel, as well as data from the Power Meter in the form of values for 3 *phase* voltage, 3 *phase* current, frequency, and power factor. From the current and voltage data we will get the power data (kWh) used by the analog pump panel.

Control testing with the aim of changing analog and automatic modes on the analog pump panel, as well as turning on and off the water pump can be carried out properly in real-time.

Keywords: IoT, Pump Panel, PERUMDAM, *Smart water management*