ABSTRACT

Irrigation is an attempt by humans to manually irrigate agriculture since ancient times. In modern times, many irrigation models have been used by farmers, one of which is by using a water pump such as in Makassar, especially in the author's village in the Manjalling, West Bajeng, Gowa, Gowa Regency areas.

In this final project, the authors design and implement a prototype irrigation automation system on four rice fields. This prototype aims to maintain the water level during the planting phase. The system input is in the form of a set point that has been set in advance on the Arduino Mega 2560 according to the water level given by each plot. After that, the system will activate the relay and the water pump for filling the fields or relay and solenoid valve for draining the land. Furthermore, the ultrasonic sensor measures the distance to the water level with a given set point.

As a result of this Final Project research, the closed system method gives precise results in reading the water level. This is evidenced by the output in the form of a relatively stable water level with an error value of <1 cm. The system is also able to deal with interference and come back close to the given set point value.

Keywords: *Irrigation, Arduino Mega 2560, Solenoid Valve, Ultrasonic Sensor, Water Pump*