

## **ABSTRACT**

*Water is the source of life for all living things on this earth. Rain is one source of water, the presence of rain is very important because it provides the most water needs from other water sources for the survival of all living things. Rain is the result of the process of the water cycle or often called the hydrological cycle. This process is very dependent on climate. However, in recent years climate change has occurred very rapidly which has resulted in seasonal changes that are difficult to predict. For this reason, it is necessary to have a device that serves to measure the intensity of rainfall.*

*In this study will produce a rainfall measurement system consisting of a magnetic sensor module hall effect (KY-003), microcontroller (ATmega 328), GSM / GPRS (SIM800L) modem, one-sided bucket type tipping bucket, and tools rain engineering. Rainwater falling on the funnel will flow to the bucket tipping, if the water volume exceeds a certain volume, the magnetic sensor produces a signal that will be further processed in the microcontroller and then with GSM / GPRS Modem the data is sent and displayed on the Thingspeak.com website. The results of this study are the successful formation of a rainfall measurement system using a magnetic effect hall sensor with the results of measurement data that can be sent via GPRS to the website*

*From the results of rainfall measurements obtained data on the characteristics of the rainfall gauge is the hysteresis value of the rainfall gauge is 0.64 for the measurement of the north side magnet and 0.31 for the measurement of the south side magnet and the results of the measurement of rainfall against this water discharge are linear with linear regression equation  $y = 0.7113x - 0.0749$ . Comparison of data on the measurement of rainfall intensity using a tool by means of manual has an error value of 5.49%*

*Keywords: Magnetic Hall Effect Sensor, Mechanical Tool, Microcontroller, GSM / GP Modem GSM / GPRS*