

## ABSTRACT

*Dispenser or place of drinking water is one of electrical equipment which there was heater as main component , the heater is used to heat the water in the reservoir tube , heater generally have power about 200-300 watts . Dispenser uses valveas a tool to deliver water into a glass from gallons . Dispensers currently on the market at this time using manual labor to open the valvefor fill water into the glass . Thus the authors aimed to create an automated system to opening and closing the valveon the dispenser .*

*Differences were found in dispensers that will be made with existing dispenser is a valveopen and close automaticly that existed at the dispenser . Dispenser that will be made have a push button for the amount of water that option will be filled into the glass . Options volume loaded them  $\frac{1}{4}$  cup ,  $\frac{1}{2}$  cup ,  $\frac{3}{4}$  cup and 1 cup full . Valve is opened and closed using servo motors . Sensors are used from ultrasonic sensors. Ultrasonic sensors are used to detect the distance between the bottom of the glass and tap with a high detection and diameter of the glass . Having obtained the diameter and height of the glass volume will be obtained . Ultrasonic sensors are used as well as the feedback that has been filled water glasses by volume .*

*Glass volume is displayed into the LCD (Liquid Crystal Display). Fuzzy Logic system will be used to control how degree servo motor will open to fill water into the glass according volume of glass. Microcontroller used to set the tap system will be open and close with fuzzy logic. From the research, the dispenser can display with LCD glass volume and be able to fill in a glass of water according to the desired volume with accuracy for a quarter of the volume is 62.3%, a half of volume is 68.5%, three quarters of the volume is 79.08% and full of volume is 68.5%.*

*Keywords : Dispenser , Ultrasonic Sensors , Fuzzy Logic , Servo Motor, Volume*