DESIGNING AND TESTING
AN AUTOMATIC DRINKING BOTTLE PACKAGING TOOL
BASED ON PLC AND HMI

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ABSTRACT

Nowadays, many industries use Programmable Logic Controller (PLC) as the main control system. PLC is an electronic device used to connect industrial processes to be more efficient and to produce high quality products. The industrial world is now starting to develop it by using real time on machines through computer visualization which is often called Human Machine Interface (HMI). HMI is a face-to-face or connecting bridge between the industrial system controlled by the PLC and the operator. HMI uses media to control industrial processes, and as media control carried out by the operator. The PLC used in this study was the Outseal PLC Shield which was programmed using the Outseal Studio application, and the HMI used was an android interface with modbus communication. PLC was used as the main control system, the system ran when the push button (PB), start, is pressed, then the packaging was carried out through the water filling sensor and the bottle closing sensor, then the packaging was filled and the closing process ran with a predetermined time, then the packaging was brought to the end position of the conveyor. The system stopped when the PB stop was pressed. The package is filled in 19 seconds and weighs 330ml. HMI displayed start button, stop button, water fill indicator, and bottle closing information. The testing system showed accurate packaging filling readings, packaging stopped at the ideal filling position, and obtained accurate bottle closure readings, packaging stopped at the ideal closing position, and packaging in accordance with predetermined standards with the accuracy of packaging 95.2 %.

Keyword: *PLC, HMI, Outseal, Conveyor*