DESIGN OF BASIC PROCESS CONTROL SYSTEM (BPCS) FOR FLOW CONTROL SYSTEM BASED MICROCONTROLLER ATMega 8535 ON MINI LEVEL FLOW PLANT LABORATORY SCALE

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Abstract
Nearly all industrial processes require assistance in carrying out the process control system one of them mini level flow plant. In order for the plant control system is running well, the thing to note about the control system BPCS (Basic Process Control System). There are several parameters that need to be monitored and controlled one of the parameters discussed in this case is a fluid flow. Instrument support on this mini plant that is, the YF-S201 as a flow sensor, control valve as a actuators, arduino uno as a input output analog control (PWM), the minimum system ATMega 8535 as serial communications, and software visual basic 6.0 as HMI (Human Machine Interface ) by applying PI control in the controller. The purpose of control in this process is that system stability is maintained and the process is running optimally. After some testing, the data obtained was analyzed and showed that the response of a stable system with a set value of Kp 0.4 and value of Ti 0.01. For the PI controller obtained the value of maximum overshoot (Mp) 1.26, the value of settling time (ts) 40 seconds, and the value of error steady state (ess) 0.4%.

Keywords: BPCS, Fluid Flow, Instruments, and HMI