INTEGRATION PLC S7 LITE 300 AND DCS CENTUM CS 3000 FOR CONTROL SYSTEM AIR FLOW THROUGH CONTROL VALVE

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ABSTRACT

Control equipment used in an industry usually come from different vendors. Therefore, the need for integration of each control equipment in order to work together to form a unitary system. The existence of gap (open system) at each vendor control equipment causes provider of integration between control devices from different vendors can be realized.

In this final design an independent control system distributed. Control valve would be controlled by using the controller proportional and integral (PI) which is built on the Distributed Control System (DCS) Yokogawa Centum CS 3000. Meanwhile, Programmable Logic Control (PLC) which will be used is the Siemens S7 PLC lite 300 which will function as a sequential control. Number of valves to be used by the two who works in synchronization and its performance will be supervised by the DCS Centum CS 3000 which can be configured with automatic or manual control model. As for the process to be controlled, to maintain the comparative value of opening a control valve 1 and control valve 2 is always the same, with the given error tolerance of 10%.

From the test results and analysis can be concluded that testing with the manual model produces the smallest error value of 4.25%. meanwhile, for the model automatically produces the smallest error values of 8.22%. Both the value of these errors occur when the second control valve opening condition of 50%.

Keywords : Distributed Control System, PI, Programmable Logic Controller, Control Valve.