

**IMPLEMENTATION OF AUTOTUNING PID
SPEED CONTROL AC MOTOR 3 PHASE
WITH CONTROLLER COMPACTRIO NI-9025**

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ABSTRACT

Speed control system is a kind of the components that are working for the purpose of controlling the process variables so as to achieve the setpoint. In this experiment uses Autotuning PID control mode that can work automatically so that the determination of the parameters P, Ti, Td is determined automatically by the program labview. At this speed control system using hall effect sensors, actuators such as variable frequency drivers, NI CompactRIO controller 9025, 3-phase AC motor plant. In this experiment the independent variable is the setpoint, whereas fixed disturbance because it is not given the load on the motor. From the experiments that have been performed the data obtained that the motor works when given a manual control voltages of 0-5 volts motor speed is 2.729-15.423 Hz, 162.4 -908.2 RPM data obtained from the transmitter gain is 58 752 RPM / Hz. And also gain the 186.25 RPM / Volt. On systems with PID autotuning steady state error 15 RPM, time constant 8216 seconds, 18 seconds settling time. From these data it can be concluded third response is the best control experiment added a third with a switch control program. By generating a steady speed of response.

Keywords: PID Autotuning , speed control, 3-phase AC motors