Optimization Analysis of Motor and Control System in Automatic Filling Machine

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

OPTIMISATION ANALYSIS OF MOTOR AND CONTROL SYSTEM
IN AUTOMATION FILLING MACHINE

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This research is performed to help students to understanding on industrial machine works. We now live in automation era and leaving behind the manual machining. Almost every process in industrial use automation machine that is controlled with only one person. With this evolution of technology we can increase the speed of production, reduce the work accident, and stability of quality product.

This automation is expected to increase the efficiency and effectiveness of a machine production. One of the automation machine that the students in ATMI Cikarang is producing a prototype of Automatic Filling Machine. This machine can be applied in some food industrial or other similar industries.

This prototype is based on filling machine in industries that uses for filling process to fill a container. This machine is controlled using *Programmable Logic Controller* (PLC) to control all of the process. This machine have 4 main process. First, is move the container from storage to rotary table. Second, rotary table will transfer to second station. In this station will fill the can using steel ball until reach the specific weight. Third is sealing the can. Fourth is transfer to next process.

The method that it used is Zegler Nichols method and also uses trial and error. In this experiment get several different result that will input it in Simulink. Experimental results that can be used to choose the components that can be used for same project with this machine. It is expected that by using these experiments there will no longer be wrong component selection

Keywords: PLC, Dc motor, MatLab, Simulink, automation, filling process.

DEDICATION

Thank you to ALLAH SWT for blessing me from start until last during my thesis process. I dedicate this work for My Lovely Parents, My Big Family and all my Friends.

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Praise and great gratitude to Allah SWT to bless me so I can complete the thesis on time.

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4. all my friends who involved direct and indirect in supporting this thesis

Final words, the author say thank you so much indeed for all for those who I can not mentions the names. Hopefully this thesis can be useful for us and become the input for the parties in need.

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