

# **AC MOTOR SPEED CONTROL DESIGN ON MEAT GRINDER BASED ON OMRON PLC**

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## **ABSTRACT**

*Technological developments are currently rapidly expanding to penetrate every aspect of life and are widely used in all activities, almost all industries have developed technology to operate in the field of production, including home industries. Meat is a source of animal protein, the quality of meat will determine the quality of processed products. Beef commodity can be processed into various products by grinding process. The very simple meat grinder uses only human power and the more modern ones use a motor as the driving force. With the development of control system technology, one way to do this is to use an inverter which is connected directly to an induction motor to regulate the speed. Coupled with the Programmable Logic Controller (PLC), which functions as an inverter controller to regulate the rotation speed of the induction motor. Human Machine Interface (HMI) is used as an input medium to select the desired motor rotation speed. The system that has been designed is proven to be successful in changing the rotational speed of the AC induction motor according to the inputted value with an average difference (error) for testing without load of 1.49% and testing with load of 13.01%.*

**Keywords:** *Induction motor, Inverter, Programmable Logic Controller, Human Machine Interface*