

INVERTER LEARNING MODULE WITH FREQUENCY ADJUST TO CONTROL THE SPEED OF A SINGLE PHASE MOTOR WITH A CAPACITY OF 500 WATT

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ABSTRACT

With the increasing need for electrical energy and various kinds of needs to support technological developments and utilize energy as efficiently as possible, we need a tool that can support the utilization of electrical energy, namely an inverter. Inverter is a circuit that functions to convert Direct Current (DC) into Alternating Current (AC) whose output frequency can be adjusted. In the learning module, the inverter with adjustable frequency functions as a learning medium and an introduction to the working system of the inverter. Inverter module design requires several components including ac to dc converters, adapters, MOSFETs, PWM modules and others that are united on a board that is connected with a connection that can be removed and installed so that it can be used as a medium for practice and learning. . By working to change the Alternating Current (AC) current to Direct Current (DC) with a voltage of 360-400 volts then it is converted using the help of a MOSFET by utilizing the Egs 8010 module as a pulse wave modulation (PWM) generator trigger in the form of a sine signal, with the output being in the form of AC current that can be adjusted in frequency, making this inverter can be used to regulate the speed of the electric motor and is also useful as a medium for learning the inverter working system.

Keywords: *Inverter, Egs8010, Mosfet, PWM, module.*