DESIGN OF 3 PHASE LOW SPEED PERMANENT MAGNET GENERATOR AXIAL FLUX TYPE ONE ROTOR AND ONE STATOR

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ABSTRACT

The rapid development of technology encourages the use of large amounts of energy, this results in the reduction of fossil fuels as the main energy source. In addition, the use of fossil fuels also causes pollution and environmental damage and has a negative impact on society in the future. For this reason, like generators in general, power plants that utilize magnetic flux have the most important component in terms of power generation, namely magnets. The magnets used are permanent magnets, permanent magnets can be applied to generators, they are very efficient because they can work well at low rotational speeds. Magnet generators make it very easy to design generators with a certain power capacity by simply changing parameters such as the strength of the magnetic flux, the number of coils and windings, the number of magnets and the size of the wire diameter. In this study, it was found that the voltage generated by the generator was 13.40 VDC, while the voltage generated in the calculation was 12 VDC. The generator produces a voltage of 13.40 VDC when no load, whereas when a 6 watt LED is loaded, a voltage of 12.50 VDC is obtained, a voltage drop of 0.9 VDC. When the generator reaches maximum power, the voltage value is 12.50 VDC and the current value is 0.75 A.

Keyword: Permanent Magnets, Generators, Magnets Flux, Energy Sources.