Design and Build a Horizontal Axis Wind Turbine Performance Monitoring System

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ABSTRACT

Current technological developments in the field of renewable energy, wind power plants, fast data collection is needed. Wind turbine testing requires accurate data so that the resulting calculation value is correct so that the final result can be, whether the wind turbine is suitable for use or not. The design of a monitoring system and a microcontroller-based data logger to facilitate data retrieval. The monitoring system is designed to provide data information, namely the value of wind speed, turbine rotation speed, current and voltage that will be recorded in the SD Card at intervals of four seconds. Wind turbine testing includes: wind power (Pin), electric power (Pout), tip speed ratio (λ), torque (T) and power coefficient (Cp).

Keywords*: Wind speed, Rpm, voltage and current*