

Original Research Paper

Solar Panel Remote Monitoring and Control System on Miniature Weather Stations Based on Web Server and ESP32

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Abstract: The weather station helps in planning socioeconomic activities such as agriculture, tourism, transportation, marine activities and plantations. The station needs an energy source, an electric energy source to operate, and is needed to get continuous assistance. This study aims to build a system for using two sources of electrical energy to support electricity stations that can be monitored and control remotely and provide information on the use of electrical energy in miniature weather stations into a web server. This research produces a remote monitoring and control system that can automatically switch primary energy sources to backup energy sources. When taking the main current source goes out, the system is able to carry the energy source back to the main source back to the main source alive again. The system can make changes manually using a web server that can be controlled remotely. When the battery reaches a voltage above 14.40 volts, the charging process stops and the system uses electrical energy from the battery. When the battery voltage reads 11.89 volts, do the battery charging process again. Electrical energy system information on miniature stations can display information about voltage, current, power, temperature and intensity of sunlight in the form of graphical visualization in real time

Keyword: Monitoring, Remote Control, Solar Panel, Web Server, Mikrokontroller.

