

Rancang bangun sistem monitoring unjuk kerja sistem PV rooftop di mushola Fakultas Teknik Universitas Indonesia = Monitoring system design for performance of a rooftop PV system at the University of Indonesia's Faculty of Engineering mosque

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Abstrak

Penggunaan PLTS terus berkembang pesat, untuk menjaga unjuk kerja PLTS dibutuhkan sistem monitoring yang mampu mencatat perubahan nilai parameter-parameter seperti tegangan, arus, daya, dan energi agar gejala-gejala penurunan unjuk kerja PLTS dapat diketahui sejak dini. Sistem pengukuran parameter ini memanfaatkan Arduino uno, sensor tegangan, sensor arus, modul micro sd dan modul nirkabel HC-12 yang dirangkai dan di kode sehingga data perubahan parameter dapat ditampilkan pada layar LED matriks secara nirkabel dan tercatat secara kontinu didalam kartu memori . Dari hasil pengujian dan proses kalibrasi yang dilakukan didapatkan akurasi sebesar 99.54% untuk pengukuran tegangan, 98.67% untuk pengukuran arus, dan 97.94% untuk pengukuran daya.

.....The use of PV continues to grow rapidly, in order to maintain PLTS performance, a monitoring system is needed that is able to record changes in the value of parameters such as voltage, current, power, and energy so that symptoms of decreasing PV performance can be known early. This parameter measurement system utilizes Arduino uno, voltage sensors, current sensors, micro sd modules and HC-12 wireless modules which are arranged and coded so that parameter change data can be displayed wirelessly on the matrix LED screen and recorded continuously on the memory card. From the results of testing and the calibration process carried out it was obtained an accuracy of 99.54% for voltage measurements, 98.67% for current measurements, and 97.94% for power measurements.