Abstract

The performance of PV modules array is affected by several factors the most important one is the array configurations. This paper focuses on study of various array configurations like series, parallel and series/parallel combination theoretically by Matlab programming and experimentally at the outdoor exposure of Baghdad city under constant 1000W/m² incident solar irradiance. Fifteen different connection type ten PV modules is chosen to examine the voltage, current and power production. In order to get maximum power of the array, it was found that the ten modules should be connected in parallel. While the lowest array configuration was when six parallel strings, two strings have four modules each and the others each one has one single module. In general, square or rectangle array produce much more power, above 30% greater than uneven connected arrays.

References

1. Bundesverb and Solarwirtschaft e.V., 2010, Statistische Zahlen der deutschen
Solarstrombranche (photovoltaic). Bundesverband Solarwirtschaft e.V. (BSWSolar), Berlin, Germany, 4 pp.


Index Terms

Computer Science  
Power Systems

Keywords

Photovoltaic system, solar module. Modeling, series, parallel.