

## Three Phase PWM Inverter for Low Rating Energy Efficient Systems

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**Abstract :** The paper presents a practical three-phase PWM inverter suitable for low voltage, low rating energy efficient systems. The work in the paper is conducted with the view to establishing the significance of the loss contribution from the PWM inverter in the determination of the complete losses of a photovoltaic (PV) array-powered induction motor drive water pumping system. Losses investigated include; conduction and switching loss of the devices and gate drive losses. It is found that the PWM inverter operates at a reasonable variable efficiency that does not fall below 92% depending on the load. The results between the simulated and experimental results for the system with or without a maximum power tracker (MPT) compares very well, within an acceptable range of 2% margin.

**Keywords :** energy, inverter, losses, photovoltaic

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