

Design of Single Phase Smart Energy Meter and Grid Tied Inverter for Smart Grid

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Abstract : Based on hybrid energy concept of smart grid to synchronize and monitor power being generated at the user end. The ATMEGA328p controller of arduino is used as a processor unit that sends wireless data between user and power utility through NRF24L01 wireless modules. Current and potential transformer circuit are designed to sense the voltage and current at the utility and power being generated at the user end through solar panel. They are designed to interface with the arduino. The approach is used to demonstrate the concept of smart grid and to facilitate for further advancements in the field of smart grid technology. A PWM (Pulse Width Modulation) technique is used to synchronize the user output power with the utility supplier.

Keywords : smart grid, hybrid energy, grid tied inverter, PWM

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