

Single-phase full-bridge inverter design





Overview

What is a single phase full bridge inverter?

A single phase full bridge inverter is implemented in this research. The inverter is equipped with a step-up transformer to increase the voltage to 220 VAC. In this study, testing was carried out by varying the frequency value from 40 Hz - 60 Hz and seeing the effect of the output voltage, output current, and efficiency.

What is a full bridge inverter system?

Block diagram of full bridge inverter system The inverter used is a single phase inverter with a Full Bridge topology to convert DC voltage to AC. The output waveform that will be generated from a full bridge inverter is a sinusoidal wave. The inverter design is shown in Figure 6.

Can a full bridge inverter produce a pure sinusoidal waveform output voltage?

A full bridge inverter is implemented in this study to produce a pure sinusoidal waveform output voltage. The Inverter device is equipped with an Arduino Nano microcontroller. The microcontroller is used as a PWM signal generator in the MOSFET Driver IC IR2110 circuit.

What is a typical single phase inverter?

A typical inverter comprises of a full bridge that is constructed with four switches, which can be modulated using pulse width modulation (PWM), and a filter for the high-frequency switching of the bridge, as shown in Figure 1. An inductor capacitor (LC) output filter is used on this reference design. Figure 1. Typical Single Phase Inverter



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