

SolarTech Power Solutions

Single-phase controllable inverter



Overview

How to control a single phase inverter?

This control is based on the single phase inverter controlled by bipolar PWM Switching and lineal current control. The electrical scheme of the system is presented. The approach is widely explained. Simulations results of output voltage and current validate the impact of this method to determinate the appropriate control of the system.

What is a single-phase inverter?

A single-phase inverter is a type of inverter that converts DC source voltage into single-phase AC output voltage at a desired voltage and frequency and it is used to generate AC Output waveform means converting DC Input to AC output through the process of switching.

What is the electrical scheme of a single phase inverter?

Fig. 1 shows an electrical scheme of the single phase inverter connected to the grid . The main specification of the inverter connected to the grid is that the current must be injected from a PV panel with a power factor within a certain range .

What is a single phase full bridge inverter?

The power circuit of a single phase full bridge inverter is constructed with precision, featuring four thyristors labeled T1 to T4 , four diodes D1 to D4 and a two wire DC input power source denoted as V_s .

Which circuit is a single phase inverter with resistive load?

The circuit given below is a single phase inverter with resistive load where R_L is resistive load , $V_s/2$ is taken as the voltage source and self commutating switches S1 and S2 , each is connected in parallel with diodes D1 and D2.

How to switch a grid connected photovoltaic single phase inverter?

For grid connected photovoltaic single phase inverter; there are two common switching strategies, which are applied to the inverter; these are Bipolar and Unipolar PWM switching. The PWM technique could be utilized for controlling the inverter's voltage source that injects currents into the grid. Many PWM procedures can be adopted .

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