SolarInnovate Energy Solutions

Inverter cabinet output voltage

Overview

What is a voltage source inverter?

Voltage source inverters (VSIs) are commonly used in uninterruptible power supplies (UPS) to generate a regulated AC voltage at the output. Control design of such inverter is challenging because of the unknown nature of load that can be connected to the output of the inverter.

How do I set a voltage for an inverter?

Enter 60 Hz for frequency for the AC waveform. This will be the frequency of the inverter output. Under Inverter Power Stage Parameters, enter 110 VRMS for the output voltage. This will be the value that the AC output will regulate to. Type Ctrl+S to save the page. Right-click on the project name. Select Rebuild Project.

What is a voltage source inverter (VSI)?

An IMPORTANT NOTICE at the end of this TI reference design addresses authorized use, intellectual property matters and other important disclaimers and information. Voltage source inverters (VSIs) are commonly used in uninterruptible power supplies (UPS) to generate a regulated AC voltage at the output.

How much crossover should a voltage source inverter have?

For the voltage source inverter, TI recommends to keep the crossover of the inner current loop at greater than ten times the AC frequency, which is met by this compensator, and no changes are needed in the design. If an adapted solution is not met, the compensator must be changed to ensure the crossover of the current loop meets this requirement.

What is a typical inverter?

Key System Specifications 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.

What is a LC output filter in a high-frequency inverter?

This reference design uses devices from the C2000 microcontroller (MCU) family to implement control of a voltage source inverter. An LC output filter is used to filter the switching component in this high-frequency inverter.

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