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# Inverter with controllable output voltage





## Overview

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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 up a voltage source inverter?

To get started: Confirm that no power source is connected to the design. Confirm that the output filter is correct for the mode that the device will run in. For example, voltage source inverter uses an LC filter. The L2 and L2N slot must be jumper wired as shown in Figure 11.

What is a common control method for off-grid inverters?

A common control method for off-grid inverters is multiple-loop control with a PI compensator. The output of the voltage loop is the reference value for the current loop. In this model, the common control method is utilized except that the voltage reference and sampling signal is the RMS value of output voltage.

How do I set up an inverter power stage?

Select AC for output. Select SDFM for sensing if available on the design. 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.



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In this mode, the inverter either injects or absorbs a constant amount of reactive power, ...



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