

A-Core Container

Cambodia Communication Base Station Inverter Grid-Connected Machine Room



Overview

What is the control design of a grid connected inverter?

The control design of this type of inverter may be challenging as several algorithms are required to run the inverter. This reference design uses the C2000 microcontroller (MCU) family of devices to implement control of a grid connected inverter with output current control.

What type of modulation is used in an inverter?

This reference design uses a modified unipolar modulation in which switches Q1 and Q2 are switched at a high frequency and switches Q3 and Q4 are switched at a low frequency (frequency of the grid). Table 2 lists the switching states of the inverter.

Does Cambodia have a power supply?

None currently available. Cambodia has substantially increased power generation capacity while reducing imports from neighboring countries. Domestic power generation has rapidly increased from 8.68 TWh in 2020 to 17.85 TWh in 2024, while imports decreased from 3.06 TWh in 2020 to 1.57 TWh in 2024.

How to set up a VRMS inverter?

In this case, the output voltage of 110 VRMS is connected, raise the DC bus to greater than 200 V to let the inverter start and feed power into the grid. As soon as the input DC voltage is raised above 200 V, for this setup, hear the relay click when the inverter starts. Increase the DC bus up to the rated voltage of 380 V.

How does a PV inverter state machine work?

The inverter state machine then sequences to checking for DC voltage. To feed current into the grid the DC voltage (which in case of PV inverters is provided from the panel or panel plus some conditioning circuit), it must be

greater than the peak of the AC voltage connected at the output of the inverter.

Can a grid connected inverter be left unattended?

Do not leave the design powered when unattended. Grid connected inverters (GCI) are commonly used in applications such as photovoltaic inverters to generate a regulated AC current to feed into the grid. The control design of this type of inverter may be challenging as several algorithms are required to run the inverter.

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