

Coal mine grid-connected inverter





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.

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.

What should a user not do when using a grid connected inverter?

The user must not touch the board at any point during operation or immediately after operating, as high temperatures may be present. 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.

How do I know if a grid connected inverter is working?

Observe the current that is shared on the load by the inverter, and the AC source. Spiking around the zero crossing can occur. These spikes may be mitigated by the user by selecting a different inverter configuration, or using a different modulation scheme. The verification of the grid connected mode of operation is complete.

Why do we need a two-level inverter?

This approach effectively addresses the issues of voltage conversion by itself, excessive space occupation when separated from power frequency



transformers (mobile substations), and the use of traditional two-level inverter output stages, which result in high harmonic content and poor waveform quality.

What is the primary control of a GFM inverter?

The role of the primary control is to determine the frequency (and angle) and voltage references of the GFM inverters as functions of active and reactive power, assuming that these components are decoupled and ensure synchronization with the grid.



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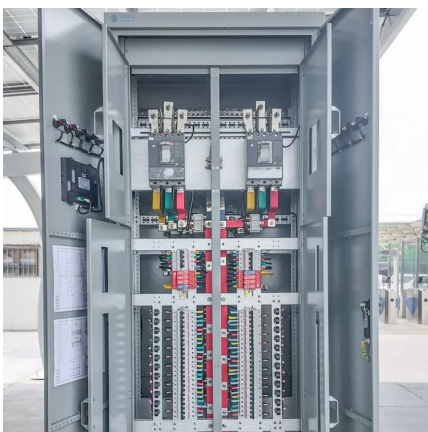


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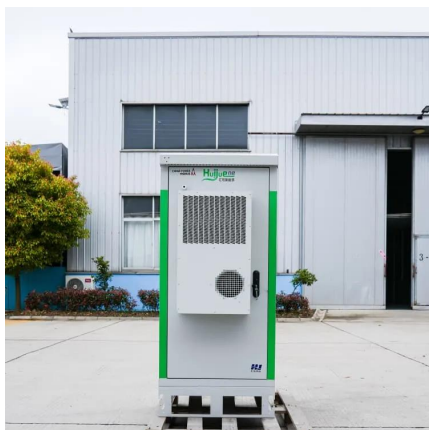
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