

SolarTech Power Solutions

Togo three-phase inverter device



Overview

What is a three-phase inverter?

Modern electronic systems cannot function without three-phase inverters, which transform DC power into three-phase AC power with adjustable amplitude, frequency, and phase difference. They are essential in several applications, including as power distribution networks, renewable energy systems, and industrial motor drives.

What is a Tigo ei inverter?

The Tigo EI Inverter is the centerpiece of the Tigo Energy Intelligence (EI) solution. It orchestrates energy production and consumption (when coupled with the Tigo EI Battery). In addition, it enables module-level monitoring, optimization, and rapid shutdown when paired with Tigo TS4 MLPE (Module Level Power Electronics) through the EI platform.

What is the difference between a half-phase and a three-phase inverter?

In a three-phase inverter, the pole voltage, which represents the voltage applied to the load, is equivalent to the pole voltage in a half-phase inverter used in single-phase applications. However in three-phase inverters, this voltage is distributed across three phases to create a balanced three-phase AC output.

How many isolated gate drivers does a tida-010025 inverter need?

The TIDA-010025 inverter requires 7 isolated gate drivers for IGBT switch control. Six drivers are used for controlling the IGBT inverter switches and the seventh driver is used for controlling the brake chopper IGBT. The isolated gate driver used in this design is the UCC23513.

What is a three-phase full-bridge inverter?

Commonly the full-bridge topology is used for three-phase inverters. For three-phase applications including motor drives, UPSs, and grid-tied solar inverters,

the three-phase full-bridge inverter topology is a frequently used design. The architecture is Figure 19: The Topology of a Three-Phase Full Bridge Inverter.

How does a three-phase AFE converter work?

The design uses switching frequency up to 90 kHz and an LCL output filter to reduce the size of the magnetics. A peak efficiency of 98.6% is achieved. The design shows how to implement a complete three-phase AFE control in the DQ domain. This bidirectional converter enables both DC fast charging and vehicle-to-grid (V2G) applications.

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