

SolarTech Power Solutions

High frequency sine wave inverters in parallel



Overview

What is a high frequency inverter?

In many applications, it is important for an inverter to be lightweight and of a relatively small size. This can be achieved by using a High-Frequency Inverter that involves an isolated DC-DC stage (Voltage Fed Push-Pull/Full Bridge) and the DC-AC section, which provides the AC output.

What is a parallel inverter?

Parallel inverters offer heightened power output, increased efficiency, and redundancy. For example, connecting two inverters with a combined capacity of 4kVA provides a power capacity of 8kVA in parallel. This redundancy ensures uninterrupted power supply and flexibility in load management. 13.

Does grid impedance affect the stability of a multi-inverter parallel system?

Many studies on the stability analysis and suppression strategies of multi-inverter parallel systems have been conducted. In , the impact of grid impedance and changes in the number of inverters on the stability of inverter output current is analyzed without considering the interaction between inverters.

How does circulating current affect a parallel-connected inverter?

However, when the inverters share a common DC source and AC bus, a circulating current is generated, which causes output current distortion and system power losses. These harmonic components of circulating current influence the inverter life cycle, and it can limit the power rating of the total parallel-connected inverter.

What are the types of circulating current in parallel inverters?

There are two types of circulating current in parallel inverters: low-frequency and high-frequency circulating current. The low-frequency circulating current is parameter related, such as imperfect symmetry in hardware and

dependent control of parallel inverter dead time [18, 19].

Can high-frequency oscillation be used in multi-inverter systems?

A novel strategy is proposed for high-frequency oscillation in multi-inverter systems. The hardware in the loop experiment is designed for verification. In the context of the energy crisis and environmental pollution, microgrid technology has developed rapidly.

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