

SolarInnovate Energy Solutions

Solar Matrix Inverter



Overview

111/111 TBB Matrix II - Solar Hybrid Inverter - TBB Matrix II 5kW Transformer-based Built-in MPPT (5.OS lite. 250V) Built-in Multiple MPPT Trackers Two AC inputs & Two AC outputs Programmable smart port ESS Functionality Parallel and three-phase capability (135kW) Matrix II is an advanced all-in-one transformer-based solar hybrid inverter for backup power, off-grid and ESS applications, featuring a high-efficiency inverter charger with a 600V MPPT solar charge controller (5.OS Lite model: 250V MPPT).What is a matrix inverter?

The proposed matrix inverter is fundamentally built on the basis of the combination of matrix converter topology with the DC-to-AC conversion technique of a multilevel inverter. The number of rows in the switches matrix represents the number of output voltage level, while the number of columns represents the number of output phases.

What is isolated matrix inverter technology?

Semiconductors The isolated matrix inverter technology evolved together with power semiconductor devices, moving from Si thyristor, IGBTs and MOSFETs to WBG semiconductors.

Are galvanically isolated matrix inverters a good solution?

This paper provides a fresh view of existing galvanically isolated inverters and establishes their division into three main classes: two-stage, quasi-single-stage and single-stage. The superiority of features provided by the single-stage solutions makes the isolated matrix inverters a promising solution.

Are isolated matrix inverters suitable for industrial adoption?

The isolated matrix inverters are an emerging technology that has not yet reached maturity and good industrial awareness; however, this technology shows good potential for industrial adoption, as was demonstrated in [53, 74].

How does a matrix converter work?

By using a switching strategy similar to a multilevel inverter switching strategy, and some modification on the matrix converter topology, the matrix converter is able to produce a stepped output waveform similar to a multilevel inverter output.

Are cycloconverters isolated matrix inverters?

In the literature, such systems are also referred to as HF-link inverters [39, 52], cycloconverters [43, 48] or single-stage inverters (converters) [30, 32], but are all considered as isolated matrix inverters in this review.

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