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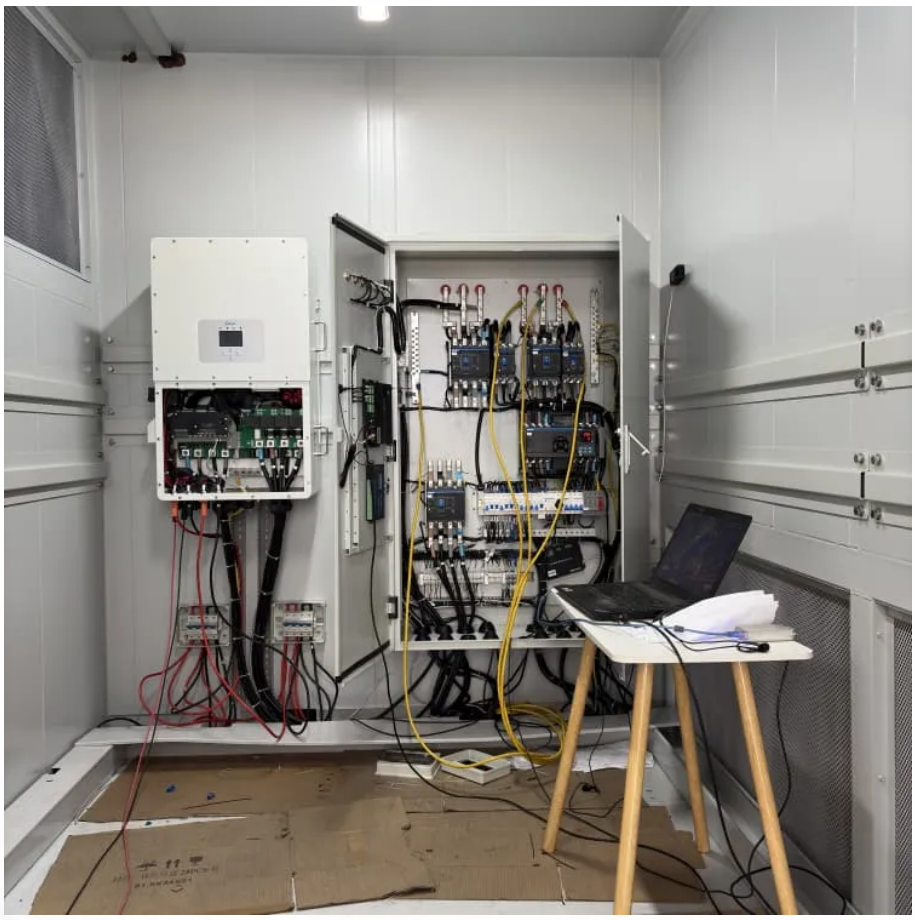
Voltage reconstruction in inverter



Overview

What is the current reconstruction method for two-level three-phase inverters?

A different current reconstruction method was studied for two-level three-phase inverters in . The authors suggested the current reconstruction strategy based on online offset compensation. This method is applied for two-level three-phase inverters, and it is also appropriate for operations with a low modulation index.

Can a three-phase inverter be reconstructed using a single shunt method?

Different aspects of using the single-shunt reconstruction method for three-phase inverters were discussed in [7, 8, 9], where the authors studied the zero voltage sampling method and three-phase current reconstruction using three shunts placed in the collectors of bottom inverter transistors, respectively.

Can a three-level inverter operate a single-shunt current reconstruction?

The three-level inverter operation with a modulation index less than 0.2 is achievable, and single-shunt current reconstruction is possible to perform. The proposed method can be used as part of a hybrid solution, together with the SVM shift method. As a disadvantage, due to the asymmetric SVM pattern, the current ripple increased.

Does neutral point voltage offset reduce asymmetry in inverter topology reconstruction?

Aiming at the three-phase current asymmetry caused by the neutral point voltage oscillation in inverter topology reconstruction, a transient compensation method of neutral point voltage offset for the α- axis component of the reference voltage vector is introduced to suppress the adverse effects.

Are two-level three-phase voltage source inverters fault-tolerant?

The fault-tolerant control of two-level three-phase voltage source inverters has

been extensively studied 1, 2, 3, including two reconstruction aspects: hardware topology and software control strategy. Various fault-tolerant reconfiguration topologies of three-phase voltage source inverters have been summarized in Refs. 1, 2, 3.

Can a low modulation index converter operate with a three-level inverter?

The goal of the presented reconstruction method was to develop the SVM method for a low modulation index converter operation when the single-shunt current measurement signal was applied to a three-level inverter.

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