ContainerPower Energy Solutions

Three-phase grid-connected inverter dual closed loop

Overview

What is a closed-loop control strategy for a three-phase grid-connected inverter?

Aiming at the problem of power coupling and complicated decoupling in the d - q coordinate system of a three-phase grid-connected inverter, a current closed-loop control strategy based on an improved QPIR (quasi-proportional integral resonant) controller in the α - β two-phase static coordinate system is proposed.

Is a grid-connected inverter control strategy feasible?

Through the theoretical analysis of the grid-connected inverter control principle, the grid-connected inverter control model is designed, and the transfer function model of each control link is deduced, and the current loop PI regulator is designed at last. The simulation results show that the control strategy is feasible. 1. Introduction.

What is a three-level grid-connected inverter?

5. Conclusion In this paper, a T-type three-level grid-connected inverter is used as the interface between the distributed power supply and the power grid, and the parameter design of the current double closed-loop control system is given, and the grid-connected control strategy is simulated.

Can a three-phase LCL grid-connected inverter control - coordinate system?

For three-phase LCL grid-connected inverters, few studies consider the steady-state error of grid-connected current and the power grid frequency fluctuation at the same time, and relevant control technologies need further research. This paper studies the controller of the three-phase LCL grid-connected inverter in the α - β coordinate system.

What is the control method of a three-phase grid-connected inverter?

For the control method of a three-phase grid-connected inverter, the current

common method is to convert it from a three-phase stationary coordinate system to a two-phase stationary coordinate system (α - β) or two-phase synchronous rotating coordinate system (d - q) [22, 23, 24].

What happens if inverter side current is used for closed-loop control?

When the inverter side current is used for closed-loop control, the phase difference between the grid connected current and the grid voltage will be caused due to the filter capacitor, and the power factor will be reduced , and the LCL resonance peak cannot be well suppressed.

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