

SolarInnovate Energy Solutions

VSC three-phase inverter configuration



Overview

What is a 3 phase voltage source inverter (VSI)?

This model shows a three-phase voltage source inverter (VSI). The VSI is an inverter circuit which creates AC current and voltage from a DC voltage source. Three different Pulse-Width Modulation (PWM) schemes are presented for controlling the VSI output. The system is designed to achieve a power rating of 10 kW.

What is voltage source inverter (VSC)?

(VSC) is an indispensable part of a variety of power electronic systems. It finds application in motor drives, power factor correcting equipment, grid integration of renewable energy sources etc. Among other types of inverters, Voltage Source Inverter (VSI) is more efficient, more robust and gives faster dynamic response. Due to t.

What is a VSI inverter?

The VSI is an inverter circuit which creates AC current and voltage from a DC voltage source. Three different Pulse-Width Modulation (PWM) schemes are presented for controlling the VSI output. The system is designed to achieve a power rating of 10 kW. A 700 V DC voltage source supplies power to the inverter.

What is a 2-level voltage source converter (VSC)?

Design of a 2-level, 3-phase Voltage Source Converter (VSC) is explained. A 10kVA, 415V 3-phase VSC has been designed, fabricated and tested in the labs in IIT Delhi. The design of VSC constitutes the gate driver circuit, gate pulse divider circuit, power circuit.

What is a grid connected VSC with P control?

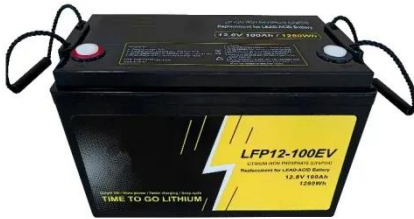
This is an example of a Grid-Connected VSC with P Control. The converter links a 3-phase ac source to a dc load/source through a voltage-sourced converter

(VSC). The VSC comprises 6 IGBT-diode pairs, which form a 2-level 3-pole bridge.

How does a VSC control system work?

1980-Hz 3-level 3-phase VSC. The VSC converts the 500 V DC link voltage to 260 V AC and keeps unity power factor. The VSC control system uses two control loops: an external control loop which regulates DC link voltage to ± 250 V and an internal control loop which regulates I_d and I_q grid currents (active and reactive current components).

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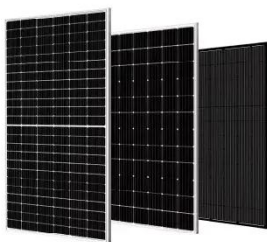


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