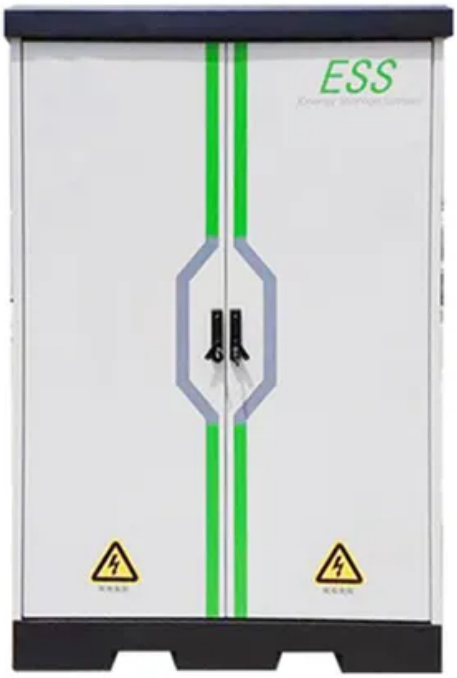
SolarTech Power Solutions

Current-controlled voltage inverter



Overview

What is the difference between voltage and current controlled inverters?

Since in current controlled inverter, output current is directly controlled, there is inherent over current protection; but in voltage controlled inverters external hardware is needed for over current protection. According to Eq. 1, in voltage controlled inverters P is directly related to δ.

What is a voltage controlled inverter?

In a voltage controlled inverter, the controlled target is the output voltage. Thus they can support the grid voltage. I would like to ask if there is another main difference between these two control methods and should I choose the one over the other.

How to control the power flow of an inverter?

The first method is through the control of switching instance of inverter so as to produce a fundamental 50 Hz voltage in the output of inverter (Schauder, 1995; Mori, 1999). In this method, the power flow is controlled by adjusting the amplitude and phase of inverter output voltage relative to the line voltage.

How do you control an inverter?

Simple strategies focus on the direct control of a single variable, such as the output or inverter current (respectively at grid- or inverter-side of the filter) . A common approach comprises an outer control loop for capacitor voltage control and an inner control loop for the inverter current.

How do voltage source inverters work?

In Voltage Source Inverters (VSI), there are two basic mechanisms by which the power flow between GCI and grid can be controlled. The first method is through the control of switching instance of inverter so as to produce a fundamental 50 Hz voltage in the output of inverter (Schauder, 1995; Mori,

1999).

Can droop-controlled grid forming current source inverters be used?

A droop-controlled grid forming current source inverter is studied in this work although other types of GFM control can also be used. This work is motivated by recent research on current source inverters and the widespread attention being received by grid forming control for power systems with high penetration of IBRs.

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