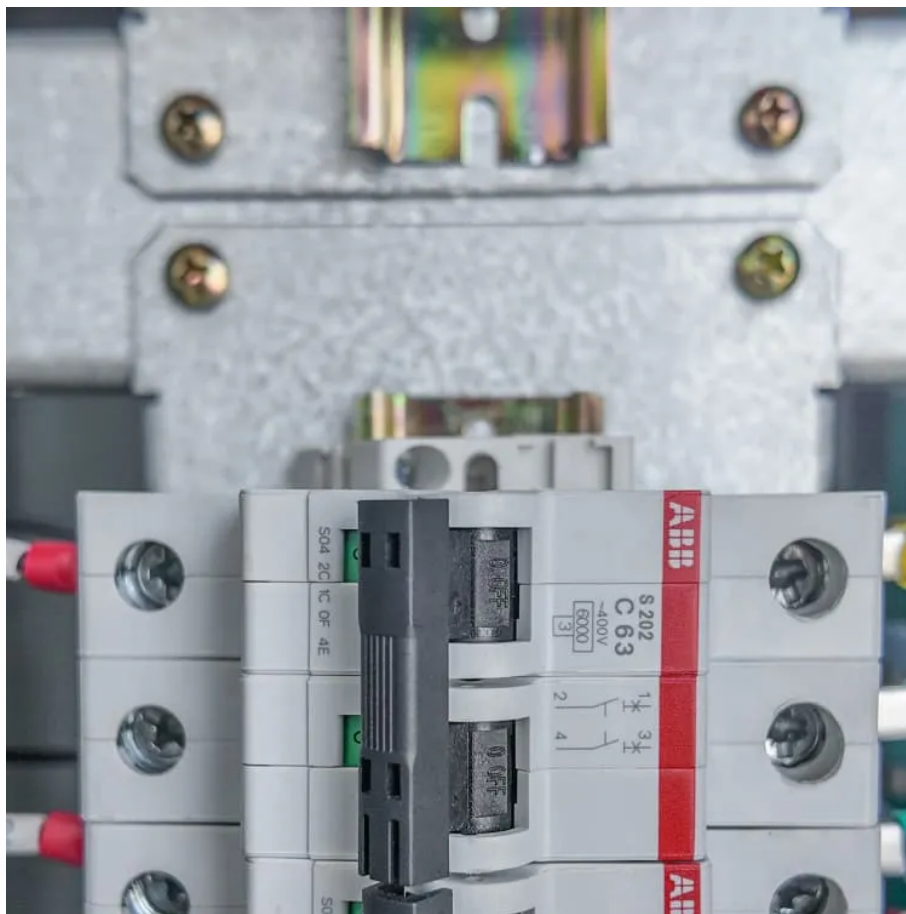


Single-phase inverter Ic





Overview

What is LC filter in a single-phase inverter?

The single-phase inverter is connected to the unknown load through an LC filter. The load can be linear or nonlinear. In this work, the output voltage of LC filter is considered to be controlled by the inverter. The models of the single-phase inverter and LC filter are presented in the following subsections.

What is a typical single phase inverter?

A typical inverter comprises of a full bridge that is constructed with four switches, which can be modulated using pulse width modulation (PWM), and a filter for the high-frequency switching of the bridge, as shown in Figure 1. An inductor capacitor (LC) output filter is used on this reference design. Figure 1. Typical Single Phase Inverter.

Can LC filter control a single-phase PWM inverter?

This work proposes a design methodology for predictive control applied to the single-phase PWM inverter with an LC filter. In the design, we considered that the PWM inverter has parametric uncertainties in the filter inductance and output load resistance. The control system purpose is to track a sinusoidal signal at the inverter output.

What are the control goals for a single-phase inverter with output LC filter?

The two control goals for the single-phase inverter with output LC filter are: A good load voltage reference tracking. A significant switching frequency decreasing. These goals can be expressed in the form of a quality function to be minimized.



Single-phase inverter 1c



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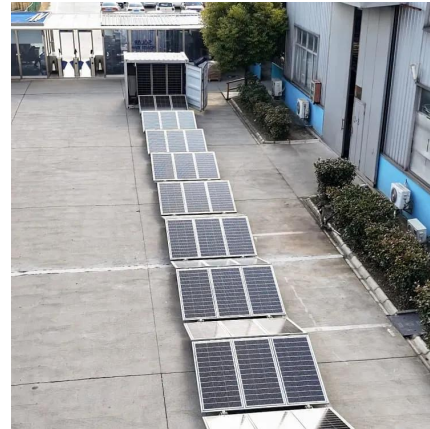
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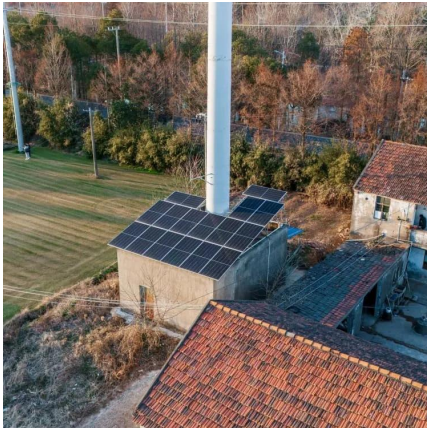
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