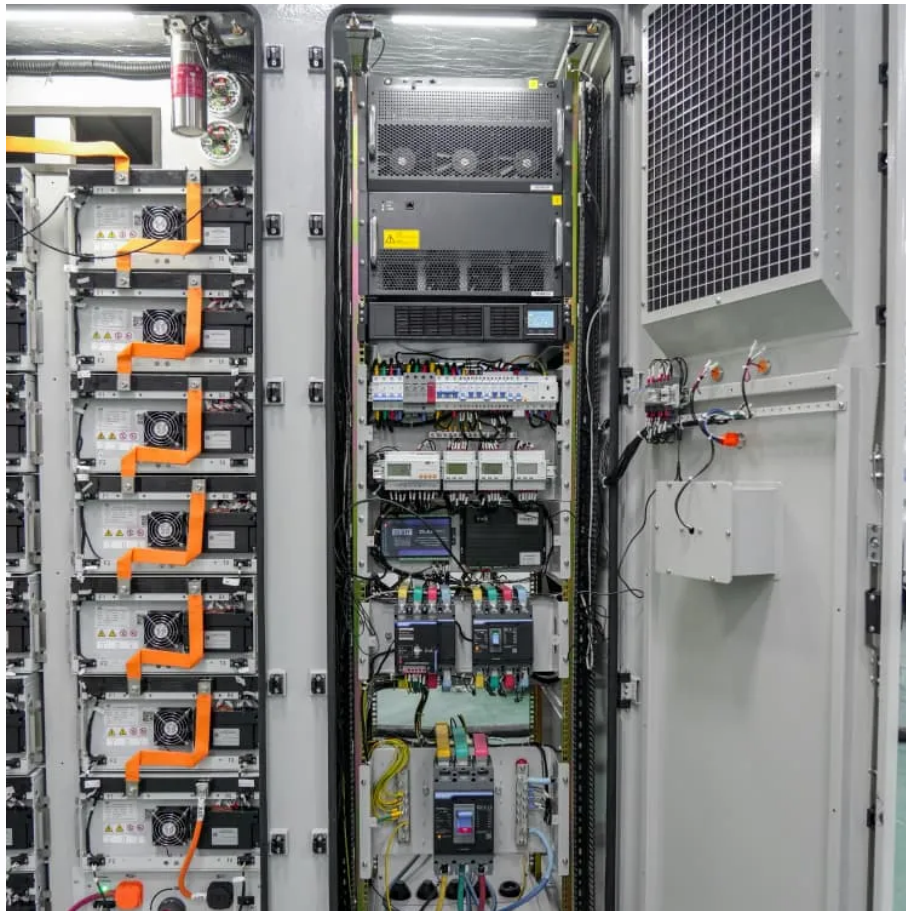


Solar inverter reactance





Overview

How does reactive power affect a PV inverter?

The flow of reactive power in the transmission line increases the total current and Joule losses in the line. In addition, a large proportion of unintended reactive power may destabilize the inverter in very weak grids. Consequently, the unintended reactive power imposes limitations to maximum active power feed from the PV inverter.

How does a reactive power inverter work?

Based on real-time measurement of the grid impedance, the unintended reactive power is estimated and autonomously compensated in the inverter. The method removes the fluctuating reactive power component, while still permitting unrestricted manual control of the reactive power.

Can a photovoltaic inverter compensate unintended reactive power?

The present work proposes a method for real-time compensation of the unintended reactive power, which decouples the reactive power from the active power of a photovoltaic inverter. Based on real-time measurement of the grid impedance, the unintended reactive power is estimated and autonomously compensated in the inverter.

Can a solar PV inverter be used for reactive power compensation?

In particular, the inverter's reactive power capability is constrained by active power generation. If the active power injection by the solar PV inverter is less than the inverter capacity, the remaining space could be used for reactive power compensation.



Solar inverter reactance



[The role of photovoltaic inverter reactance](#)

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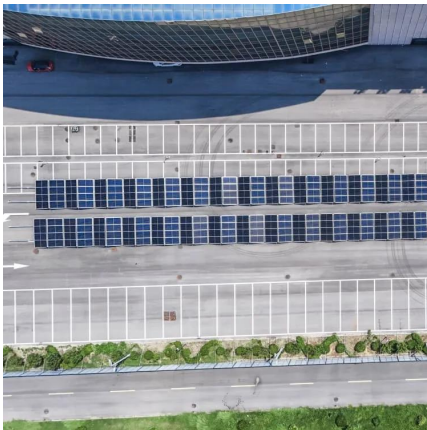


reactive ...



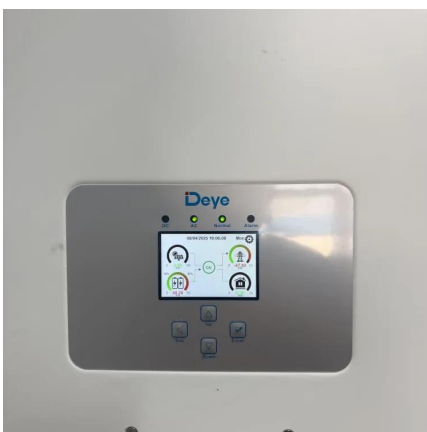
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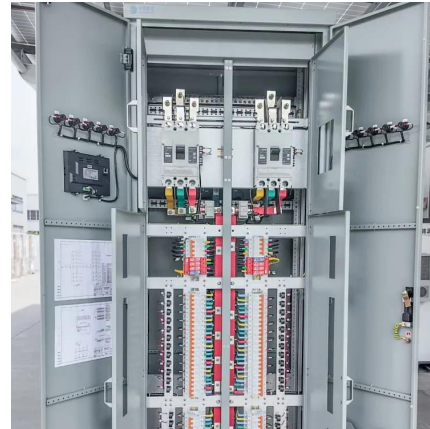
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