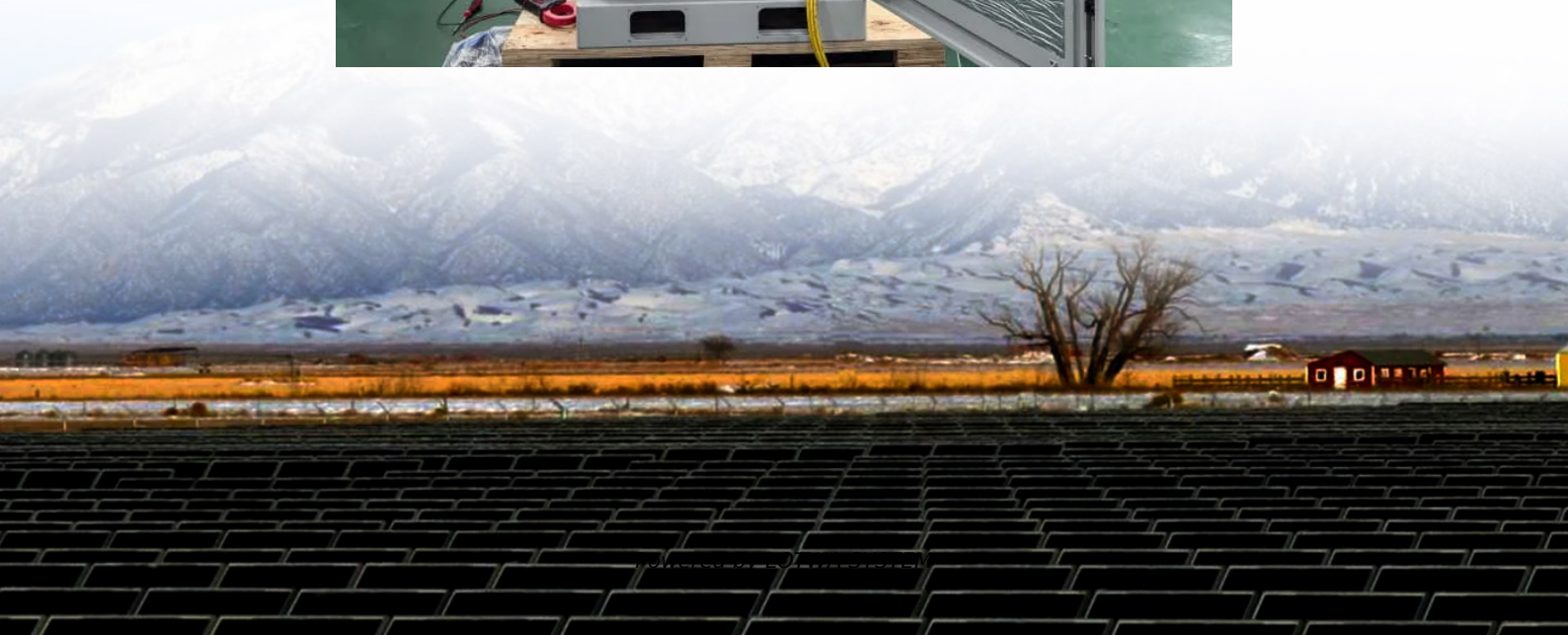


Pulsation at the low voltage end of the DC inverter





Overview

How do single-phase inverters affect DC bus power quality?

In general, the connection of several single-phase inverters to a DC bus to supply AC loads generates a double-frequency power oscillation in the DC link. Usually, each single-phase inverter has a random voltage phase angle reference and a different load power factor that strongly influences the DC bus power quality.

Why does a two-stage single-phase inverter have a second harmonic current?

1. Introduction In the two-stage single-phase inverter, the second harmonic current with twice output voltage frequency exists in the former DC converter because the instantaneous output power of the latter inverter contains the pulsating power of twice the output voltage frequency.

What does U_{DC} mean on a DC inverter?

When the DC link voltage of the inverter is u_{dc} , the modulation waves u_{s1} and u_{s2} can be taken as (1), (2) (1) $u_{s1} = \frac{1}{2} U_{dc} M \cos(\omega t)$ (2) $u_{s2} = \frac{1}{2} U_{dc} M \cos(\omega t + \pi)$ where M is the modulation index ($0 < M < 1$); ω is the angular frequency of AC side output voltage. u_{dc} is the DC link voltage. Fig. 1.

Why do inverters have a lower PF?

It is worth noting that, in cases of lower S power, the PF is reduced, due to the converter reactive power consumption. In addition, Fig. 11 (d) shows each inverter θ_{vk} update. Initially, all inverters start with a reference angle set to 0° .



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