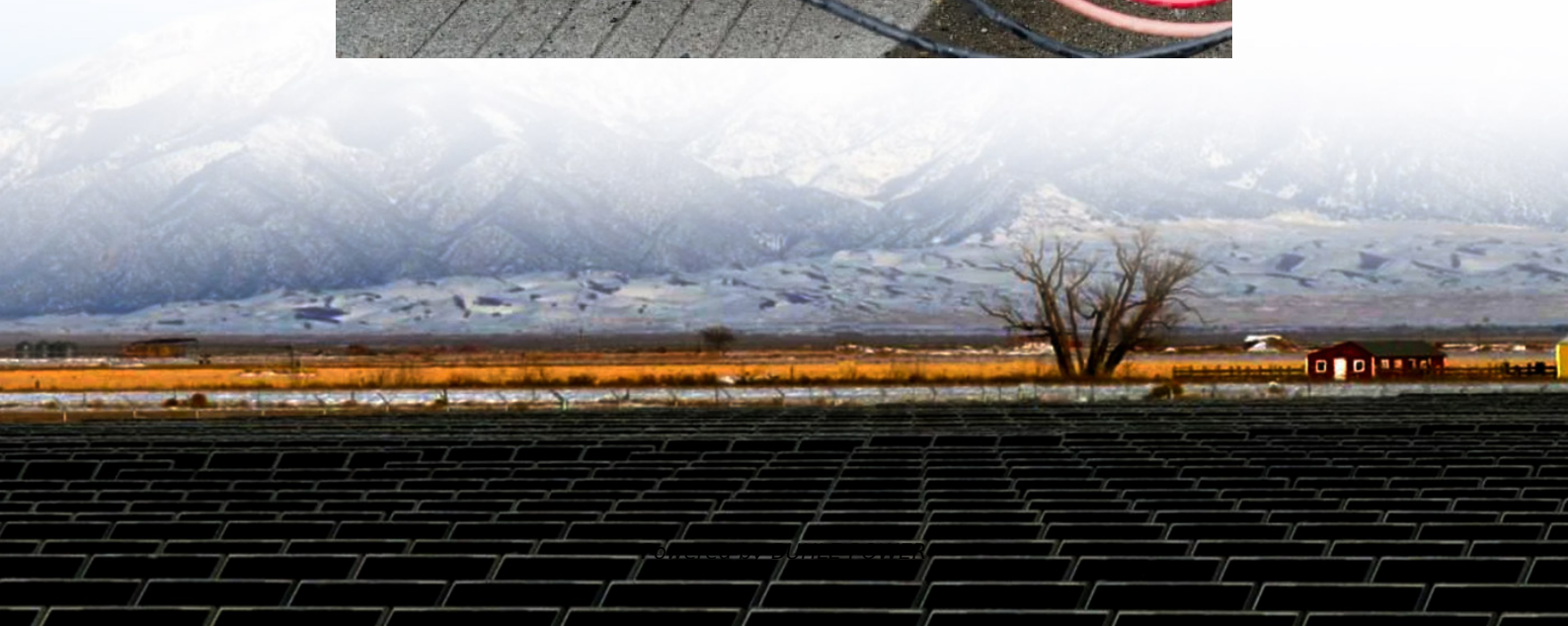


Protection of high frequency inverter





Overview

Why do inverters have protection issues?

Protection issues arise because inverters have fault characteristics that are significantly different from those of traditional synchronous generators. Synchronous generators produce approximately six times rated current during a fault, while inverters can be programmed to respond to faults in different ways.

Do GFM inverters affect traditional protection schemes?

The fault response of GFM inverters and its impact on traditional protection schemes are ongoing research topics. Distance protection is today one of the most commonly applied protection schemes and depends on multiple system preconditions for reliable operation—many of which may no longer hold in systems with a high penetration of inverters.

How can a grid be protected from overcurrent faults?

Another option is to eliminate overcurrent protection schemes and develop more advanced protection schemes that use current differential or other methods to detect and clear faults. An additional protection scheme used on the grid is based on special relays that measure the rate of change of frequency (ROCOF).

What is inverter power switch short-circuit protection?

Inverter power switch short-circuit protection is fully integrated. A desaturation detection circuit is embedded in both the high- and low-side output stages and monitors the IGBT collector-to-emitter voltage by means of an external high voltage diode.



Protection of high frequency inverter



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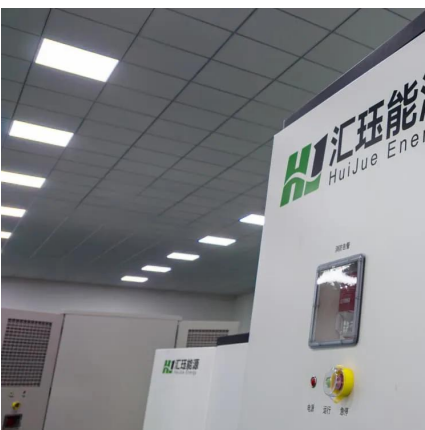
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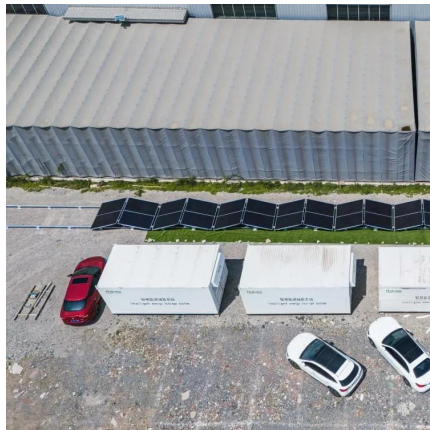
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