Relationship between the front-stage voltage and the rear-stage voltage of the inverter

What is a front stage AC/DC converter?
The front stage of the AC/DC converter is a power factor correction circuit,which can improve the power factor and reduce grid-side current harmonics. Its performance affects the utilization of grid energy and control effect of the rear-stage DC/DC converter. Current research on PFC circuits mainly focuses on Boost and its improved circuits.

What is a two-stage AC/DC converter?
With the continued development of the new energy vehicle industry, two-stage isolated AC/DC converters are widely used because of their simple topology and easy control characteristics. In this study, we investigate the front-stage Buck power factor correction (PFC) converter and rear-stage full-bridge converter.

What is the control strategy of two-stage AC/DC converter?
In summary,Cf = 100uF. The two-stage AC/DC converter control strategy is illustrated in (Fig 6). Fig 6. Control strategy of two-stage AC/DC converter. The front-stage PFC circuit adopts a PI double-closed-loop control strategy[23]. The output voltage,input voltage,and input current were collected as the control variables.

Are there competing interests in AC/DC converter?
Competing interests: The authors have declared that no competing interests exist. With the development of power electronics technology,high efficiency,high power density,and wide voltage range of AC/DC converter using two-stage circuit structure have become the industry research hotspot.

Due to the components at twice the fundamental frequency of output voltage in the instantaneous output power of a two-stage single-phase inverter (TSI), the second harmonic ...

The front stage uses a boost converter to perform the step-up function of the output voltage of the PV array on the DC side and MPPT; the rear stage is a grid-connected inverter ...

The input-output precise feedback linearization was used to decouple the front stage current loop, the voltage between the front and rear stages and the voltage on the DC side of SST. The ...

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The front stage uses a boost converter to perform the step-up function of the output voltage of the PV array on the DC side and MPPT; ...

In addition, the relationship between the front-stage dc-dc converter and the rear-stage dc-ac inverter is analyzed by the modal participation factor calculated in CS. An ...

The four-switch buck-boost circuit regulates the output voltage in a certain range through the duty cycle control, and the CLLC resonant circuit can control the output voltage by ...

The input-output precise feedback linearization was used to decouple the front stage current loop, the voltage between the front and rear stages ...

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Figure 2 shows the topology of a two-stage isolated AC-DC converter comprising a front-stage Boost PFC converter and a rear-pole full-bridge LLC resonant converter. This ...

Isolated AC-DC solid-state transformers widely use the front and rear multi-stage cascade structure of the bidirectional converter. Due to the difference in the control bandwidth ...

The on-board DC-DC converter consists of a front-stage buck converter and a rear-stage three-phase interleaved LLC resonant converter. The equivalent model is ...

The article proposes a PV grid-connected inverter system based on a two-stage structure. The two-stage structure is composed of the front-stage boost circuit combined with the disturbance ...

ABSTRACT Due to the components at twice the fundamental frequency of output voltage in the instantaneous output power of a two-stage single-phase inverter (TSI), the ...

In fact, when the DC/AC of the rear stage controls the system power, the rear stage is equivalent to a constant power load (CPL) for the front stage DC/DC, and its negative ...

For the two-stage PV generation system adopted in this system, the front stage is a DC/DC converter, which is a boost circuit, and the rear stage is a DC/AC converter, also ...

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