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(54) **INVERTER, POWER GRID POWER SUPPLY SYSTEM, AND METHOD FOR CONTROLLING EXCITATION INRUSH CURRENT**

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(57) **ABSTRACT**

This application provides an inverter, a power grid power supply system, and a method for controlling an excitation inrush current. The controller adjusts the output voltage of the conversion circuit based on a first phase that is of the output voltage of the conversion circuit and that is during reduction of the output voltage, the magnetic flux of the iron core in the transformer, an output voltage that is of the conversion circuit and that is after the output voltage is reduced, and the target voltage value, so as to increase the output voltage of the conversion circuit and keep the magnetic flux of the iron core less than the saturation magnetic flux.

