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### **Why do the IT8300 series provide the best solution for power supply test system?**

Load banks are commonly used in the design and testing of power supplies or other power conversion equipment, including motor drivers and inverters. The load banks have two forms: the basic load which consists of power resistors and electronic loads which employ active circuits to dynamically simulate the load changing. The load banks are often used in burn-in test to determine early product failures, which is an important part of production testing. Electronic loads are often integrated into automated test systems. The test reports are either stored locally or uploaded via computer interface, so that the test data can be analyzed further or used for archiving.

For most of the electronic loads, their common problems are they take up too much space, consume a lot of energy, and generate heat and noise. However, ITECH IT8300 Energy-regenerative electronic load solves these issues. This article gives the answers from ITECH manufacturers to the typical questions engineers concerned about, especially related to the advantages of the IT8300.

#### Q&As for the IT8300 series

Engineers often put forward a lot of questions when investigating the IT8300, because its advantage seems too good to be true. The following list of typical questions and our answers is compiled:

Question 1: Will my energy meter going to spin backwards and sold electricity to utility grid using the IT8300?

Answer: The IT8300 recovers up to 95% of the load energy to factory AC mains grid. In most cases, the power recycled from the IT8300 is much less than the power consumption of the local distribution network. As shown in Figure 1. Therefore, the meter will not go backwards, but it will obviously run slower.

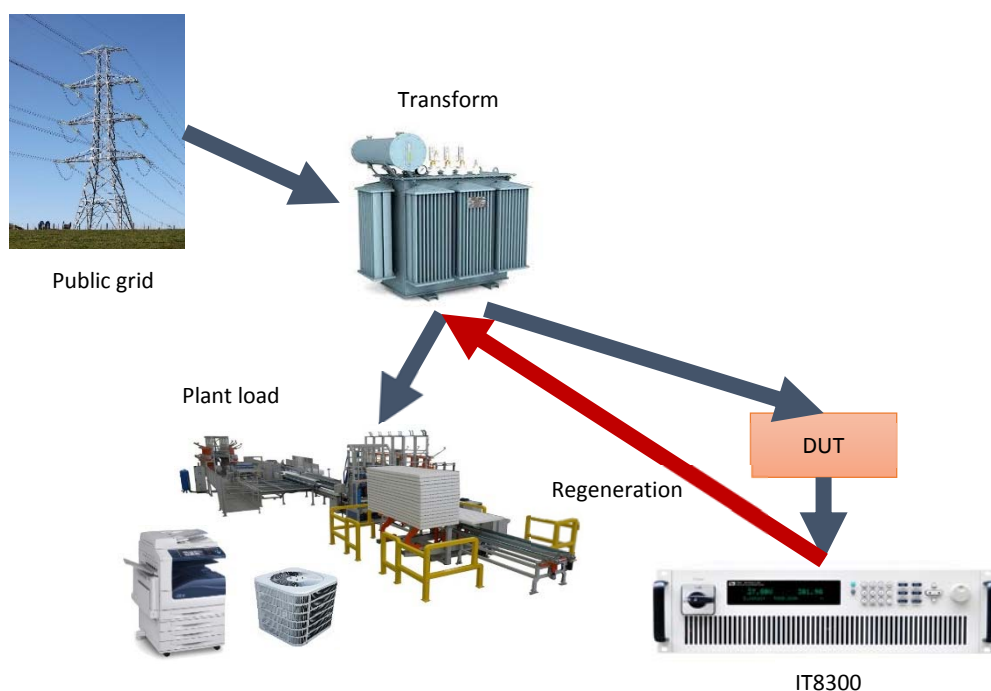


Figure 1: the IT8300 is usually a small part of the overall power plant loads

Question 2: Can the IT8300 be connected to an independent DC power supply?

Answer: Yes, if the factory has an independent source, the IT8300 can be connected with it, such as generators, photovoltaic systems or batteries, where these objects do not draw power from the grid. In this case, the IT8300 series is a net contributor to the grid.

Question 3: If the power grid drops out and the independent power supply is still working, will IT8300 continue to deliver power to the grid and cause safety accident?

Answer: No. The IT8300 includes automatic grid monitoring system, which can detect phase voltage, frequency in time for grid synchronization. If grid drops out, so will the IT8300, which is called "Anti-islanding", the same working principle of grid-tied PV inverter. In this case, the IT8300 will simply shut down, waiting for the operator to turn it back on.

Question 4: The IT8300 is more expensive than a conventional electronic load. Aside from the obvious advantages, how do I balance the initial high investment?

Answer: The test of the IT8300 has shown that the return on investment through reduced energy costs is about two or three years. Energy-regenerative electronic load provides a green solution for load testing of power supply and power conversion systems. It recycles up to 95%

of the load energy. The reliability of the IT8300 is high, because the load dissipates very little heat per KW of the measured power. The IT8300 does not need a lot of MOSFETs or IGBTs in parallel to handle heat dissipation, resulting in longer life and lower maintenance expense.



Figure 2: The IT8331 / IT8332 can sink 10.5KW. Up to 10 units can be operated in parallel to sink 105KW



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