Evaluating Electrical Vehicle Non-contact Charging Systems

[Application]

A non-contact charging system through magnetic inducing desorption transformer is an effective way to avoid accidents at charging batteries with high voltage of over couple hundreds V. Although a desorption transformer is used in the non-contact system, there's a large gap due to a case for wiring protection, and leakage inductance causes to drop and limit voltage. PZ4000 can make a total evaluation for a non-contact charging system, including measurement of voltage and current waveforms, calculation of power efficiency, harmonic measurement and others.

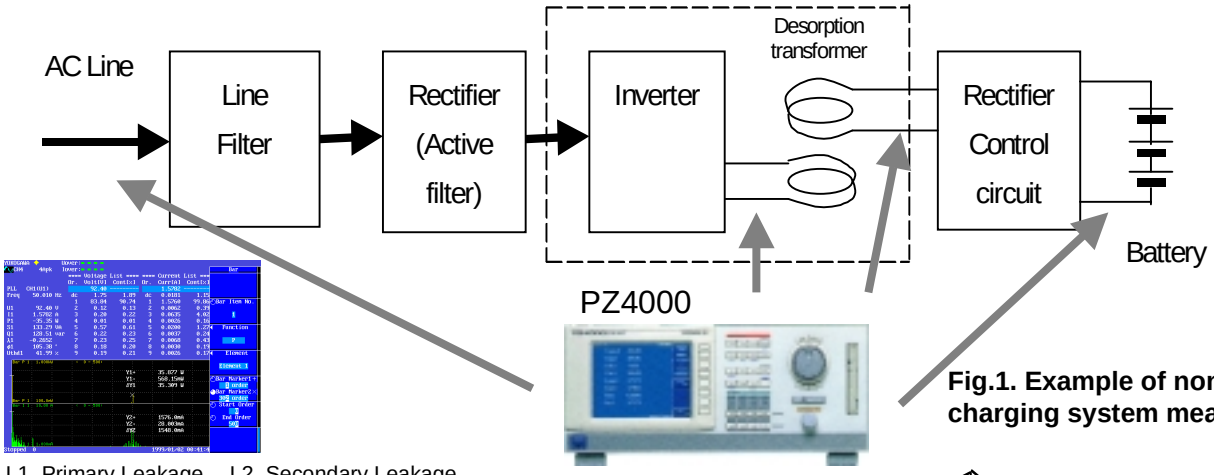

Fig.1. Example of non-contactin charging system measurement

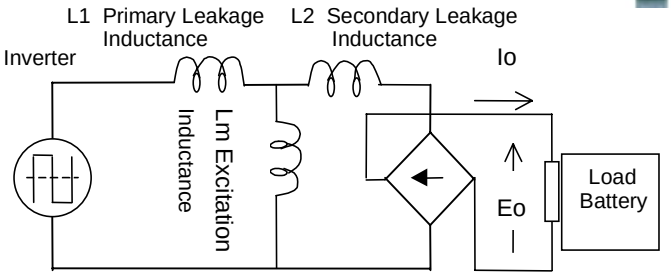

Fig.2. Inverter and desorption transformer

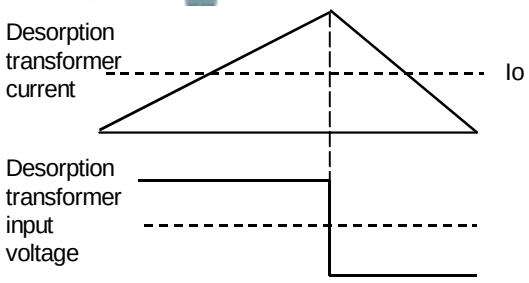

Fig.3. Current and Voltage of a desorption transformer

[Solution Features]

#Performance required from the power meter

-Measurement of total efficiency - from transmitter efficiency and AC battery line through desorption transformer to battery charging

-High-precision, wide-bandwidth measurement of switching waveform from DC to high frequency

-Higher-order harmonic measurement, or waveform analysis function using FFT function

#Benefits for the user

-The PZ4000 performs the functions of three instruments. Waveform observation, value display and harmonic measurements are performed in one instrument, saving the user test and evaluation time, cost and space for many instruments. The measuring results are highly reliable because the numeric calculations are based on the waveform data.

-You can input signals without using isolated amplifiers or current sensors. This reduces the error of such accessories.

Source : '98 Switching Battery Symposium