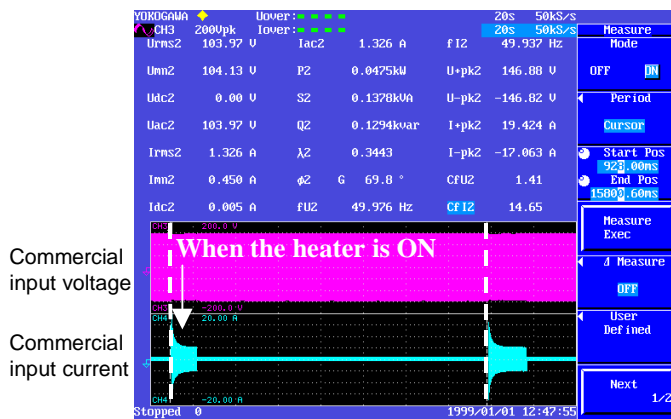


Designing Energy-Saving Appliances

[Background & Application]

Energy used by office equipment and home appliances is one of the fastest growing sources of electricity consumption in the world. It currently accounts for several percent of total commercial sector electricity use. However, research shows that much of this energy is wasted because office equipment and home appliances sit idle for long periods throughout the day as well as overnight and weekends. To reduce power consumption on standby mode, new control technologies are being developed to perform and regulate intermittent power control. PZ4000 is an ideal solution for the measurement of power and current from the intermittent control action. With the PZ4000, fluctuating waveform data can be captured over a long period, and you can set the averaging period for power measurement.



Commercial input voltage
Commercial input current

Commercial input voltage
Commercial input current
Inverter output voltage
Inverter output current

Example of consuming power measurement of a page printer.

The above figure shows waveforms of voltage and current on standby mode. Waveform data in the period of warming internal drum is needed to be averaged.



Example of measurement of an inverter-driven cooking plate.

To measure the efficiency of a cooking plate, which is set to keep a fixed temperature, you need to make averaging calculation of one cycle period of ON/OFF actions.

[Solution Features]

#Performance required from the power meter

- Monitoring control signals, input voltage, current waveform and power values to confirm the intermittent control action.
- Calculating power values in a given period based on waveform data.
- Setting measurement period (synchronized measurement using external trigger 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.