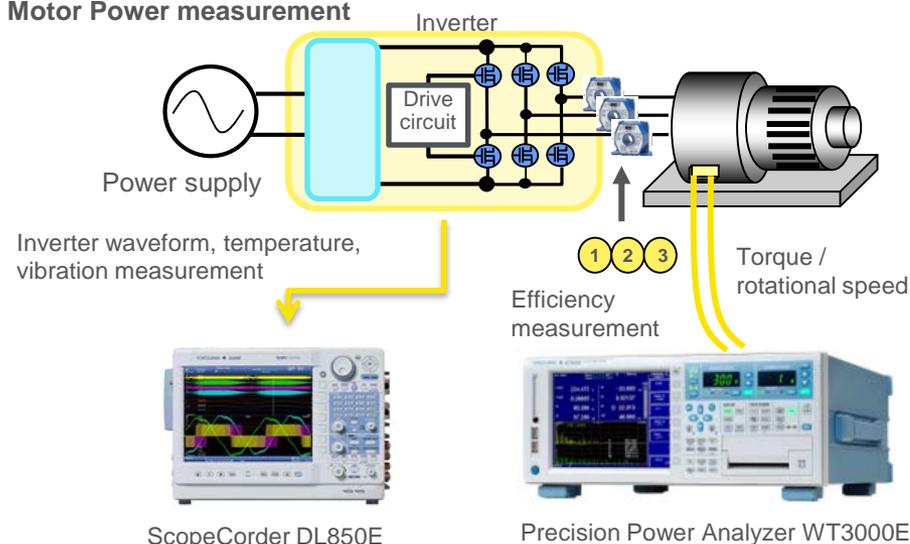# Precision Efficiency Measurement of Premium Motors

Evaluation of Power, Efficiency, Waveform and Other Parameters

In the industrial motor market, regulations for higher efficiency have started to be implemented in countries around the world. In the United States, the IE3 regulations were implemented in 2010. The high-efficiency standards for motors are divided into IE1 (Standard efficiency), IE2 (High efficiency), IE3 (Premium efficiency), and IE4 (Super premium efficiency), and companies in the world are striving to develop products meeting the standards.

Efficiency measurement is achieved by combining the WT3000E power analyzer, which is capable of high-accuracy measurement at a basic power accuracy of ±0.04%, and the DL850E ScopeCorder, which is a high-performance waveform recording instrument. The DL850E enables high-speed measurement of the inverter power, drive waveform, vibrations, temperature, and other parameters using a single instrument.

Example of using WT3000E and DL850E

ScopeCorder DL850E

Precision Power Analyzer WT3000E

Example of evaluation of premium motor

- Precision power measurement using WT3000E
The Precision Power Analyzer WT3000E, which is at the top of its class in the world, enables measurement of motor power with a basic power accuracy of ±0.04%. The torque and rotation speed can be measured simultaneously to enable display of the motor efficiency (%) as a direct calculation, and DA output can also be performed.

- DL850E 100 MS/s and 12-bit high-speed insulation module
The DL850E's 100 MS/s module can be used to capture the inverter voltage signal and current signal input to a motor at a high resolution of 100 MS/s and 12 bits.

- Using DL850E for evaluation of start current characteristics
The motor start current and voltage waveform observation, temperature, vibrations, impact, and other parameters can all be measured using a single instrument. Also, the realtime power calculation function based on power calculation (/G5 option) performs calculations simultaneously for both power values and harmonics.