

WT1800E Precision Power Analyzer New Function 1

Current sensor power supply (6-channel) option

The WT1800E enables large-current measurement using a single device integrated with a sensor without the need to route wiring or provide an external DC power supply. By integrating the measuring device, its power supply, and the sensor into a single unit, improved noise resistance can be attained.

*The /EX option for WT1800E is required when using a shunt resistance box.



WT1800E Precision Power Analyzer



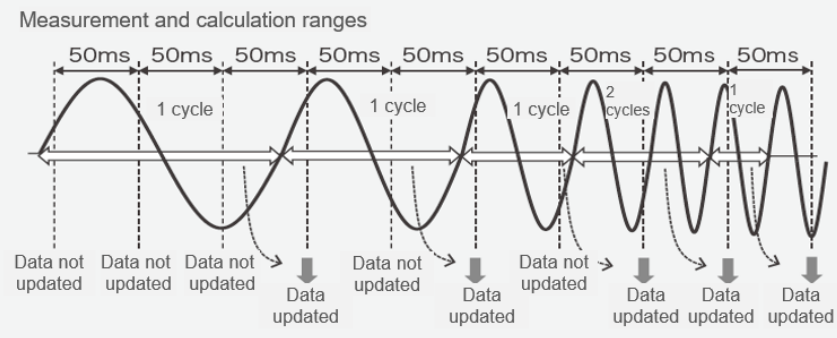
Connection of WT1800E and current sensor power supply

WT1800E Precision Power Analyzer New Function 2

Development of new AUTO data update cycle

In addition to fixed data update cycles that can be set from 50ms to 20s, a new "Auto" setting has been added which updates data in sync with the cycle of input signal. This enables measurement without any gaps by tracking changing frequencies when measuring devices such as motors where the frequency of the input signal fluctuates based on changes in rotational speed. Measurement is possible from frequencies as low as 0.1 Hz.

Also, the torque and rotational speed (analog or pulse) can be input to the WT1800E to evaluate the mechanical power, motor efficiency, and total efficiency of a motor.



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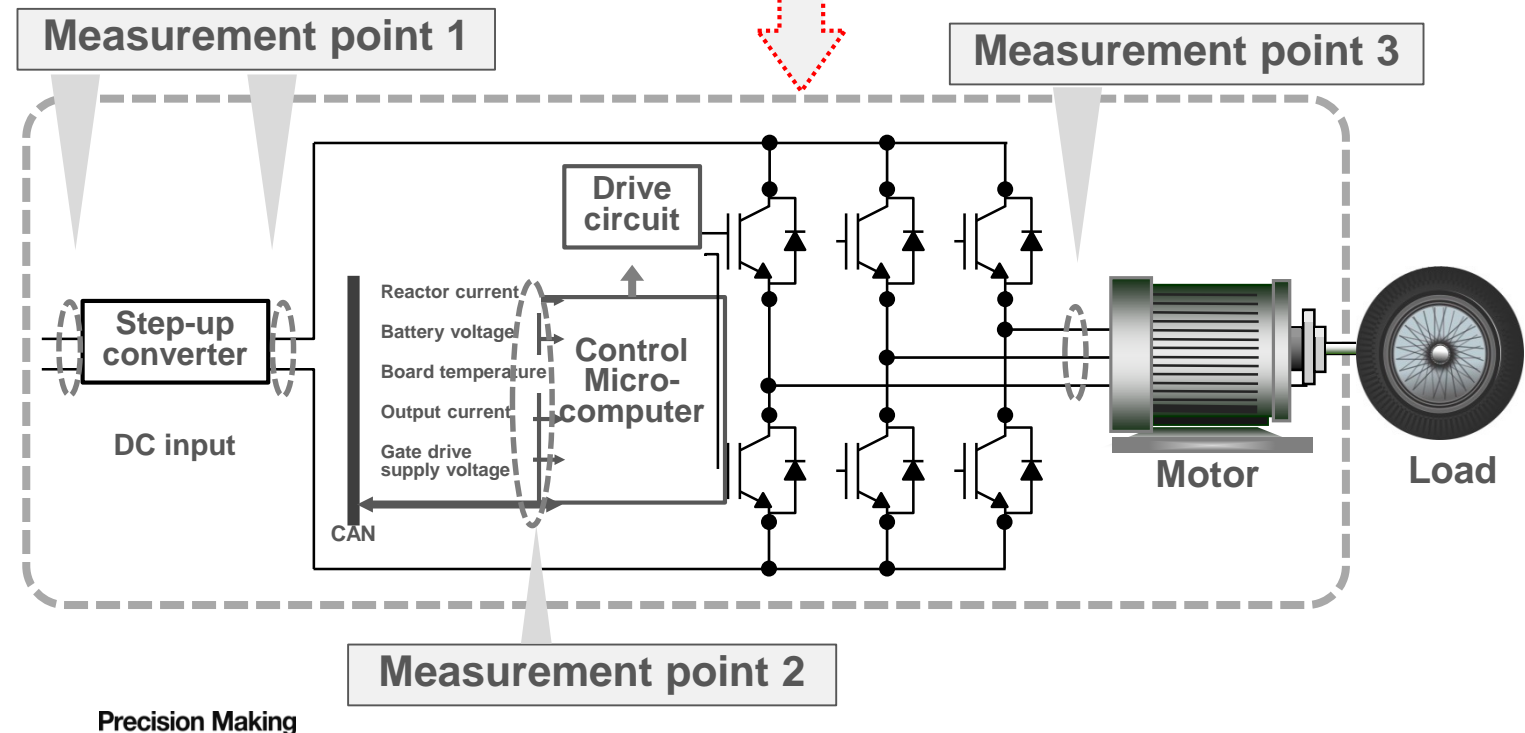
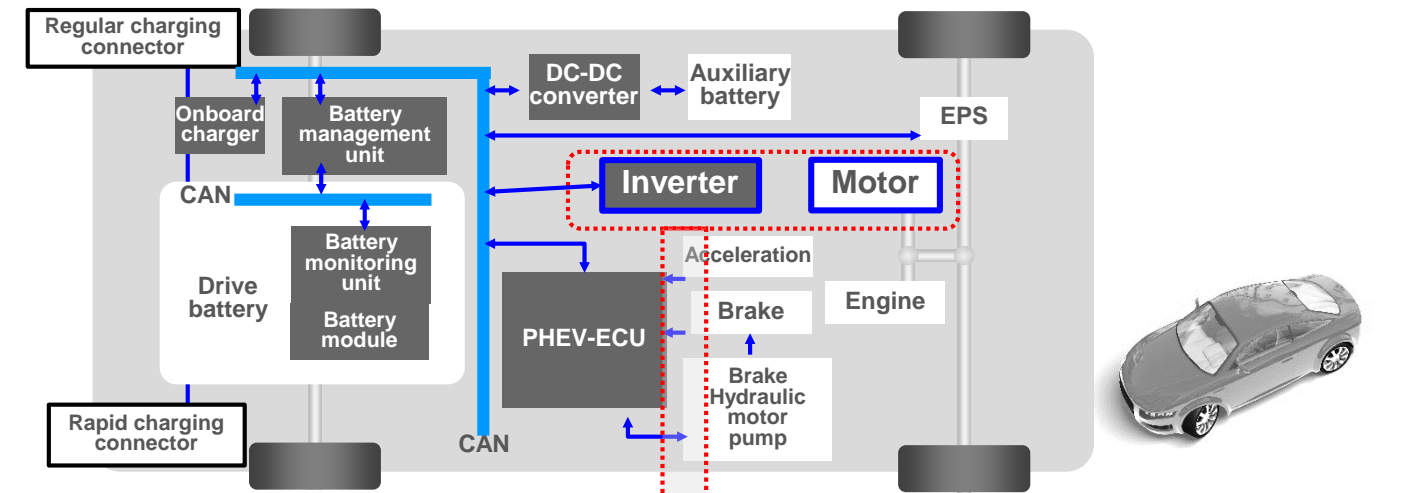
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Test&Measurement



Measurement Solutions for Automobile Development

In inverter development, SiC and GaN devices are used to develop technology to achieve more compact and lightweight designs. Network data traffic is being increased to improve the safety performance and other features of automobile systems, and high-speed buses are being developed to meet this technical need. At Yokogawa Meters & Instruments, we offer a wide range of measuring instruments as tools supporting the development of such technologies and our customers' operations.



Precision Making

Measurement point 1

DC-DC converter efficiency measurement

Up to six input modules ("elements") can be installed in the WT1800E, allowing simultaneous measurement of the input/output of high-accuracy power gauges, DC/DC converters, and inverters. The DC power accuracy has been improved to $\pm 0.1\%$, which enables high-accuracy efficiency measurements for both DC and AC. Also, the CT series power supply can be installed in the WT1800E unit as an option, providing easy large-current measurements.

- Wide range: Power: Up to 1 MHz, Voltage and current: Up to 5 MHz
- High-speed sampling rate: 2 MS/s
- Power DC / Basic accuracy: $\pm 0.10\%$
- Power factor error: 0.07% of apparent power
- High-speed data capture at 5 ms (Standard)
- New Auto data update cycle setting
- Web server function
- Data collection software provided free of charge

WT1800E

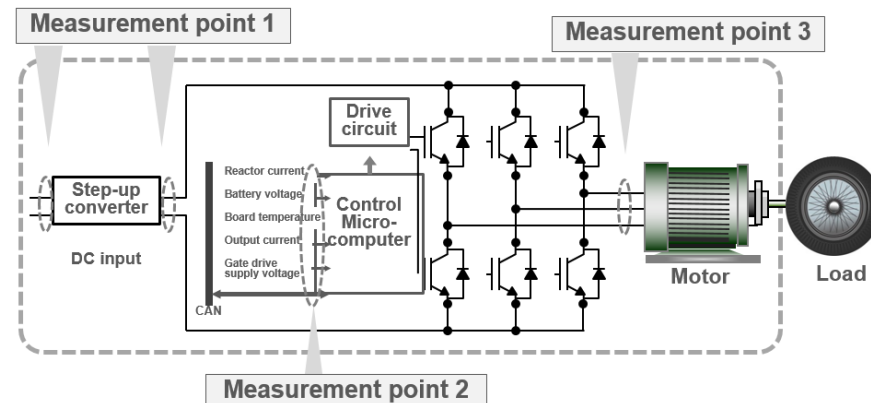
Precision Power Analyzer



WT1800E Precision Power Analyzer
Example of AC/DC current sensor



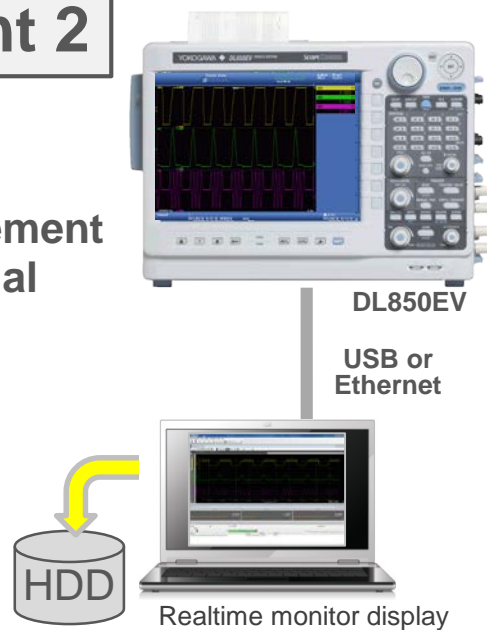
CT2000A CT1000 CT200 CT60



Measurement point 2

ScopeCorder DL850E/DL850EV Inverter waveform measurement CAN/LIN data + analog signal measurement

- CAN: Max. 240 signals
- LIN: Max. 120 signals
- SENT monitor module
- Analog input: Max. 128 channels
- PC linkup function for continuous recording



Realtime monitor display



Example of realtime power calculation measurement

Signal measurement and CAN data simultaneous measurement can be performed using various types of modules, including voltage, distortion, acceleration, vibration, rotational speed, and temperature, enabling observation of the delay time for CAN data with respect to various types of analog data. Using the 16-channel temperature and voltage modules enables multichannel temperature measurement for up to 128 channels. PC linkage can be used for realtime monitoring and for continuous long-term recording to hard disk.

Measurement point 3

Inverter and motor efficiency measurement

5MHz band (voltage, current) performance enables even more accurate measurements than before. A torque meter can be used to input the torque and rotational speed, allowing evaluation of the mechanical power, motor efficiency, and total efficiency of the motor.

Measurement point 3

Transient power measurement at acceleration and deceleration

The PX8000 Precision Power Scope is a wide-band power gauge capable of capturing and calculating waveforms in the 20MHz band at 100MS/s. It can accurately capture high-speed changes in power. The PX8000 is capable of simultaneous measurement of voltage, current, and power waveforms, enabling evaluation of the quality and instantaneous performance of devices in development.

WT1800E

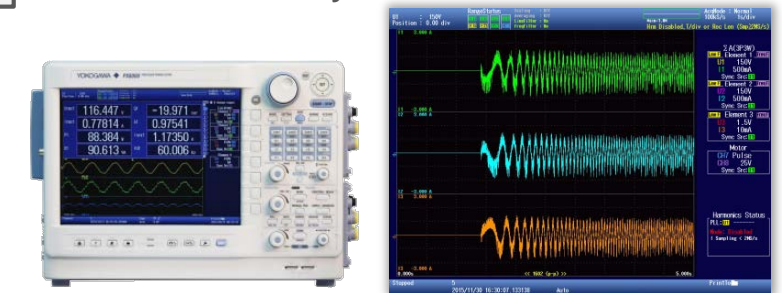
Precision Power Analyzer

High-speed measurements as fast as 1 ms (Standard)

The WT1800E includes a high-speed data capture mode as a standard feature, which enables data collection at cycles of 5 ms right out of the box. Detailed transient phenomena at 3-phase motor startup can be verified. Also, using an external signal allows high-speed data collection at cycles as short as 1 ms.

PX8000

Precision Power Analyzer



- Other measurement examples
- High-frequency power measurement of non-contact charging and power supply
- Characteristic test of reactors and other low-power factor devices

Measurement point 3 ScopeCorder DL850E/DL850EV

Realtime power calculation function

- Realtime power calculation function
- 100MS/s, 12-bit, 1kV insulation and a wide array of other input modules are available
- Maximum record length: 2G points
- PC linkup function for continuous recording

Insulation measurement for up to 16 channels at 100MS/s can be performed. This allows measurement of various high-speed control signals and output including IGBT gate signals of 3-phase PWM inverters. The insulation input module features high removal performance for common mode noise, which enables stable measurement even under severe noise environments at inverter evaluation. The realtime power calculation function enables simultaneous observation of input/output measurement signals and power parameter calculation value trends. Moreover, power values can be calculated for each cycle to easily analyze transient phenomena.