YOKOGAWA

WT1500
Precision Power Analyser

Scale power validation with confidence

The WT1500 combines a unique high-voltage DC input, unmatched DC accuracy, wide bandwidth, and high-performance AC measurement capabilities in a space-saving 2U-high housing. This scalable measurement platform brings precision power analysis to the development of advanced energy-conversion technologies.

Enables validation of:

- Electric vehicles
- EV charging
- Wind power generation
- Photovoltaic inverters & systems
- Energy storage
- Electric motors and drives
- Pumps and matrix converters
- Batteries and power supplies
- Aircraft power and propulsion systems
- Data center UPS, PSU and power distribution network
- Cooling systems

- Direct measurement of high DC voltage of up to 2000 V
- World's greatest DC power accuracy ± 0.038% (basic accuracy DC, 50/60 Hz
- New! Space-saving 2U size design
- New! Up to 20 channel power measurement via optical synchronization
- Dedicated current sensor input connector supports various types of sensors
- New! Support for both encoders and resolvers for motor measurements
- New! CAN/CAN FD data output
- New! Support for WiFi dongle
- Remote control operation, or via external touchscreen

Built for automation

The WT1500 is developed to enhance automated test systems for power conversion applications. Packed in a 19-inch rack 2U high housing, the WT1500 optimizes rack utilization and increased channel density. Combined with CAN/CAN FD data output, User Datagram Protocol, Ethernet protocol for low latency data transfer, and IEEE1588-time synchronization, the WT1500 is optimized for system integration of applications such as automotive development, efficiency tests of inverter driven motors, renewable energy technologies and traction applications.

Scalable up to 20 power measurement channels

An optical synchronization interface allows the synchronization of five WT1500's, creating a power measurement system with 20 channels. Additionally, it allows to measure the mechanical power and efficiency of 10 electric motors, with a resolver or encoder, or 20 motors when using analogue speed sensors. During synchronization, all sub-units can be controlled from the master unit, and the data is recorded in a single file in the master unit which simplifies the operation.

Measure with confidence

The WT1500 can house four power measurement channels of two different types. A high voltage input element with a bandwidth of 300 kHz, and measurement capability of 2000 V DC and 1500 Vrms AC. And a wideband input element with a measurement capability of 2 MHz and 1000 Vrms AC and DC input. Both are equipped with a dedicated connector which supports various types of current sensors. The input elements can be mixed freely to meet the requirements for the type or stage of power converter being evaluated.

Laboratory-class accuracy
With total power accuracy of ±0.038% at DC and 50/60 Hz and low-power-factor accuracy of ±0.07% of apparent power at 50/60 Hz, the WT1500 enables reliable efficiency evaluation even when losses are small. A 16-bit A/D converter and 2.5 MS/s sampling provide the measurement foundation required for demanding power-conversion tests. This helps engineers identify small performance differences and make design decisions with greater confidence.

Precision harmonic analysis
Analyze harmonics up to the 100th order and fundamental up to 2.6 kHz. With a lower frequency limit of 0.1 Hz, the WT1500 enables measurement of harmonics and total harmonic distortion (THD) even at very low motor rotation speeds. Users can view harmonics alongside conventional RMS values of voltage and current or compare different inputs side by side (particularly useful when comparing input and output of inverters, ballasts, emergency power supplies etc).

Ease of operation
As it is designed to be used in automated test systems, programming examples in a wide variety of programming languages are available. When used as stand alone instrument, the WT1500 can be controlled via our WTViewerEfree software, web server, or via the use of an external USB-C touchscreen or monitor (with mouse and keyboard).

Flexible current sensor connectivity
Both the high voltage and wide bandwidth input elements feature a current sensor input that accepts current and voltage-output and sensors across multiple measurement ranges. Compatibility with Yokogawa AC/DC current sensors, split-core sensors and clamp-on probes provides the flexibility to select the right sensor for each current level, installation and test objective. Dedicated cables and conversion adapters simplify and help standardize measurement setups across R&D, validation and automated production environments.

More insight from every test
The WT1500 measures more than voltage, current and active power. It can calculate apparent and reactive power, power factor, phase difference, frequency, integrated energy, voltage and current ripple, and three-phase unbalance. With selectable data update rates from 10 ms to 20 seconds, engineers can adapt the instrument to fast automated sequences or longer efficiency tests, reducing the need for separate calculations and providing a complete view of system performance.

Why choose the WT1500?

High performance – With class-leading accuracy, 2000 V DC high-voltage measurement capability, wide-band performance at 2 MS/s, and multi-channel measurement of up to 20 power inputs, the WT1500 fulfills increasingly advanced and demanding measurement requirements. The WT1500 allows evaluation of new power conversion technologies, which operate at higher DC voltage to increase their efficiencies.

Integrable – The compact 2U height rack space saving system, supports evaluation of four power elements and four motors in a single unit. The system is designed to be remotely controlled and is easy to integrate in a control program, while supporting user datagram protocol to increase communication speed and reliability. Additionally, the WT1500 can be controlled via an external touchscreen as a stand-alone instrument.

Scalable – The new multi-unit synchronization function enables easy expansion of channel count up to 20 power measurement channels, controlled via the main unit. The motor inputs support either encoders or resolvers, adding a new layer of flexibility. The measurement data of the WT1500 can be transmitted onto a CAN/CAN-FD bus to extend the capabilities of a larger measurement system.

YOKOGAWA EUROPE B.V.
Euroweg 2, 3825 HD Amersfoort
The Netherlands
Tel. +31 88 464 1429
PrecisionMaking.EU@yokogawa.com
tmi.yokogawa.com

Rev. AUG 2026