OMICRON

MI 600

High-Precision Test and Analysis System for Dissipation Factor and Capacitance

Highly Precise Measurements with the MI 600 System

The MI 600 is a highly precise modular test and analysis system which can be used to determine parameters of electrical systems and components, in particular dissipation factor and capacitance. The multi-purpose system can measure ungrounded as well as grounded test objects, such as generators, due to its ability to be floated at high voltage potential.

Modular compact design

The MI 600 system consists of two acquisition units, one fiber optic controller, and a PC. USB 2 technology provides plug-and-play connectivity to any current desktop PC, rack-mounted computer or laptop.

Unequaled safety and flexibility

Complete electrical isolation between the acquisition units and the user's PC is achieved using fiber optic cables with a maximum length of 2 km / 1.2 miles each.

As all functions of the MI 600 are controlled remotely by the software, there are no controls provided on the acquisition units.

Outstanding precision and performance

The MI 600 system operates with state-of-the-art digital technology and easy-to-use software. High-speed analog / digital converters with a high resolution, combined with complex digital processing algorithms, ensure outstanding precision.

Large input range

The MI 600 is equipped with an 11-stage input amplifier which can be set via the user software. This highly sensitive input is able to process very low currents even in the 20 μA range.

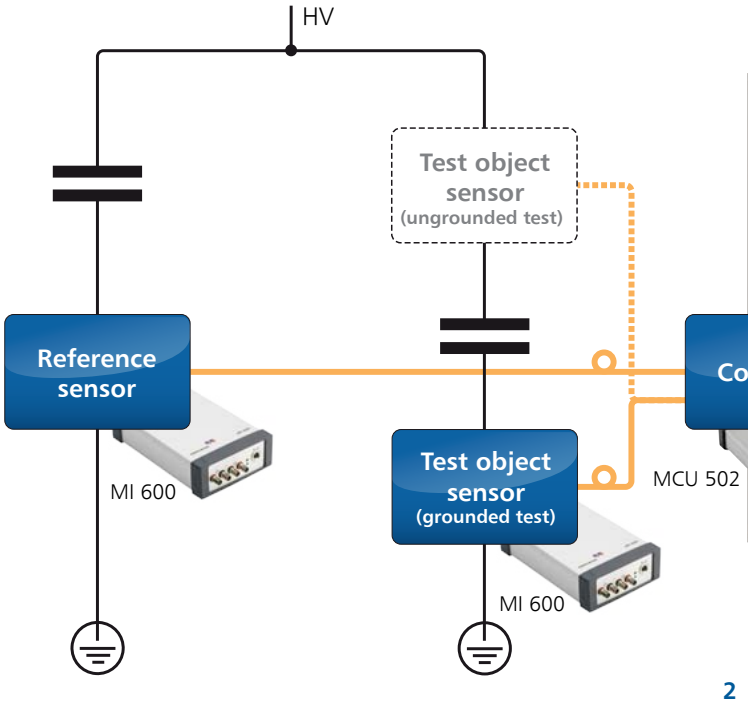
An integrated shunt permits direct measurement of input currents up to 100 mA. The measuring range can be extended up to 28 A by means of external shunts.

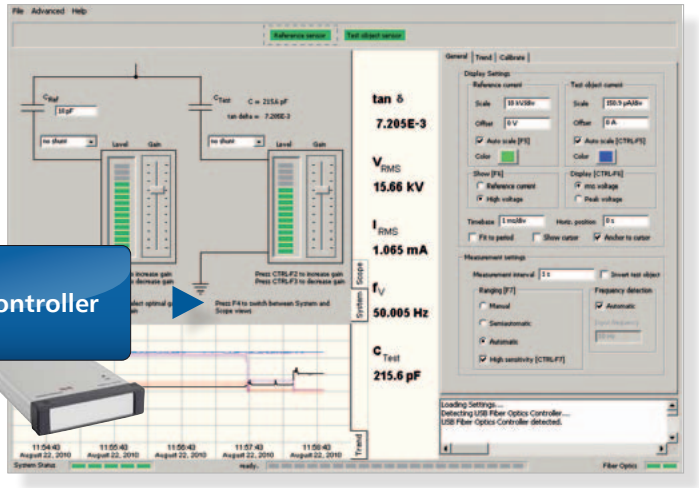
Real-time data analysis

The MI 600 system displays the current in real time similar to an oscilloscope. It acquires essential electrical parameters such as dissipation factor, capacitance, voltage, current or frequency and reflects their trends.

Low power consumption

With a power consumption of less than 4 W in measuring mode, the MI 600 is optimized for battery operation. Each acquisition unit has a power consumption of less than 10 mW in standby mode.





Test set-up of the MI 600 system

Individual data storage and reporting

The measured quantities to be saved on the hard disc can be individually selected. Measured data can be saved automatically every 300 milliseconds or manually.

The MI 600 can be optimally integrated into existing test configurations using the appropriate software interfaces. The optional comprehensive "Report" function offers test reports in Microsoft Excel™ which can also be customized to individual requirements.

Order number

VE004400	Dual-channel tan delta measurement system 2x MI 600 measurement units (hardware) 1x MCU 502 controller 1x shunt 2x power supplies, batteries with cables 2x fiber optical cables + software package
VE004401	2x MI 600 measurement units (hardware)

Technical Data

	Display / Measuring range	Accuracy	Resolution
Dissipation factor (tan δ) / Power factor (cos φ)	0.001 E^{-5} to ∞ (absolute)	± 2 % of measured value + 2 E^{-5}	1 x 10^{-6}
Capacitance of test object	0.1 pF to 50 µF	± 0.25 % of measured value	0.001 pF
Input voltage	0 to ∞ (absolute)	± 0.5 % of measured value	0.1 V
Input frequency	5 Hz to 50 kHz	± 0.0025 % of measured value	0.001 Hz
Input current	20 µA to 100 mA rms (with external shunt up to 4 A, 15 A or 28 A)	± 0.2 % of measured value	0.01 µA

System data

Input impedance	50 Ω
Measuring interval	300 ms
Reference capacitance range	10 pF to 10 nF (recommended: 100 pF)

Power supply

Supply voltage	9 to 12 V DC
Power consumption	4 W (standby < 10 mW)
External power supply unit	Input range: 100 V to 240 V, 50 Hz to 60 Hz
Battery pack	Rechargeable lithium polymer battery 11.2 V / 4.8 Ah, battery life > 12 h

Mechanical data / Ambient conditions

Dimensions (w x h x d)	110 x 44 x 190 mm / 4.33 x 1.7 x 7.48 inch
Fiber optic connectors	2 x ST, multimode fiber 50 / 125 µm / 0.002 / 0.005 inch (up to 2 km / 1.2 miles length)
Temperature	0 °C to 55 °C / 32 °F to 131 °F (operation) -10 °C to 60 °C / 14 °F to 140 °F (storage)
Humidity	5 % to 100 %, non-condensing

PC Requirements

Hardware (minimum)	Pentium® 4, Athlon® 64 or higher, 1 GB RAM, USB 2.0
PC operating system	Windows 2000 Pro™ to Windows 7™

OMICRON is an international company serving the electrical power industry with innovative testing and diagnostic solutions. The application of OMICRON products allows users to assess the condition of the primary and secondary equipment on their systems with complete confidence. Services offered in the area of consulting, commissioning, testing, diagnosis, and training make the product range complete.

Customers in more than 140 countries rely on the company's ability to supply leading edge technology of excellent quality. Broad application knowledge and extraordinary customer support provided by offices in North America, Europe, South and East Asia, Australia, and the Middle East, together with a worldwide network of distributors and representatives, make the company a market leader in its sector.

For a complete list of available literature please visit our website.

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