5478

Portable Tera Ohmeter 5 kV

Datasheet



HAEFELY

Current and voltage – our passion

Designed by Tettex

General Description

The main reason why insulations fail is due to excessive heat, moisture, dirt, vibrations and aging. To detect such deteriorations in order to initiate preventive maintenance procedures it is necessary to perform regular insulation resistance tests.

The total current in the body of an insulation system consists of leakage currents, charging currents and absorption currents. These currents are time dependent. At the start of the measurement the current is mostly dominated by the capacitance charging current. About one minute later the capacitance is charged and the total current is mainly the absorption current, which is caused by molecules that polarize.

The absorption current decreases to a negligible value after a few minutes and if no surface leakage is present

the current flowing now consists only of leakage current, which should be stable.

The Tera Ohmeter 5478 offers a complete set of functions to measure and detect effectively all parts of current in an insulation system. The instrument can supply an output power of 5 W and a test voltage of up to 5000 V and measure insulation resistances up to 5 Tera Ohms.

Additionally, the Tera Ohmeter performs step voltage measurement, withstand voltage test, AC/DC voltage and frequency measurement up to 600V as well as diagnostic measurements.

The instrument is fully automatic and requires no measuring range adjustment. A large dot-matrix LCD displays measuring values and test progress. Up to 1000 measurement results can be stored in the in-built memory. Test reports can be sent over an RS-232 interface to an external computer.

Features	Advantages
▪ Programmable- test voltages 250 V ~ 5 kV, threshold currents 1 µa ~ 1.4 mA, timer 1 s ~ 30 min.	☑ Quick and easy measurements
▪ Guard terminals.	☑ Eliminates surface leakage
▪ Battery or mains operation, built-in battery charger.	☑ Flexible operation
▪ Built-in RS232 interface and supplied application software	☑ Data exchange to external PC
▪ Automatic discharge of capacitive loads	☑ Safe and reliable operation
▪ Five different measuring modes in one instrument	☑ Cost-effective measurement

Applications

Insulation Resistance Measurements on:

- Power Transformers
- Distribution Transformer
- Instrument Transformer
- Rotating Machines
- Bushings
- Cables
- Surge Arrestors
- Insulation Systems

Scope of Supply

- TΩ Meter 5478 (type A or B)
- Application Software APSW 5478
- Carrying bag
- Mains cable
- Test leads, 2 m
- RS 232 interface cable
- Test tips
- Alligator clips
- HV connection sets
- User manual & Test Certificate



Technical Data

Measurement		
Resistance range	0.01 MΩ … 5 TΩ	± 5 % rdg ± 3 dig.
Capacitance range	0 … 50 pF	± 5 % rdg ± 2 dig.
Leakage current	0 … 1.4 mA	± 3 % rdg ± 3 dig.
Withstand test range	0 … 5500 V	± 3 % rdg ± 40 V
AC/DC voltage range	0 … 600 V	± 3 % rdg ± 3 V
Frequency range	45 … 65 Hz	± 0.2 Hz
Polarization index	0 … 99.9	± 5 % rdg ± 2 dig.
Dielectric discharge	0 … 99.9	± 5 % rdg ± 2 dig.
Test voltage	250 V … 5000 V	± 3 % rdg ± 3 V
Stepping	50 V steps	
Input resistance	3 MΩ	

Hardware	
Interface	RS 232, optical isolated
Built-in memory	1000 measurement results
Display	Dot matrix LCD, 160 x 1 backlight
Warnings	Visual and Sound
Overvoltage category	EN 61010 cat. III 600 V
Re-chargeable battery	6 x 1.2 … 1.5 V, NiCd or NiMH, IEC LR14

Mains Power Supply	Type 5478-A	Type 5478-B
Voltage	115 V AC +6 %/-10 %	230 V AC +6 %/-10 %
Power	10 VA	10 VA
Frequency	45 … 65 Hz	45 … 65 Hz

Environmental	
Operating temperature	0 °C +50 °C
Storage temperature	-20 °C +70 °C
Humidity	5 ... 90 % r.h. , non-condensing

Mechanical	
Protection	IP 54
Pollution degree	2
Dimensions (W x D x H)	265 x 185 x 110 mm (10.4 x 4.3 x 7.3 in)
Weight	2.3 kg (5.1 lb)

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Current and voltage – our passion

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