

# 5478

## Portable Tera Ohmeter 5 kV

*Datasheet*



Sold & Serviced in USA by:



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# HAEFELY

Current and voltage – our passion

Designed by



# 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
<ul style="list-style-type: none"><li>▪ Programmable- test voltages 250 V ~ 5 kV, threshold currents 1 µa ~ 1.4 mA, timer 1 s ~ 30 min.</li></ul>	<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Quick and easy measurements</li></ul>
<ul style="list-style-type: none"><li>▪ Guard terminals.</li></ul>	<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Eliminates surface leakage</li></ul>
<ul style="list-style-type: none"><li>▪ Battery or mains operation, built-in battery charger.</li></ul>	<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Flexible operation</li></ul>
<ul style="list-style-type: none"><li>▪ Built-in RS232 interface and supplied application software</li></ul>	<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Data exchange to external PC</li></ul>
<ul style="list-style-type: none"><li>▪ Automatic discharge of capacitive loads</li></ul>	<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Safe and reliable operation</li></ul>
<ul style="list-style-type: none"><li>▪ Five different measuring modes in one instrument</li></ul>	<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Cost-effective measurement</li></ul>

# 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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HIGH VOLTAGE



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