5478

T Ω Meter (5kV) Insulation Tester

TΩMeter 5478 is a digital multipurpose tester intended for testing, analyzing, inspecting and maintaining of high voltage insulation.

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 TΩMeter 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 TΩ.

Additionally the TΩMeter performs step voltage measurement, withstand voltage measurement, AC/DC voltage and frequency measurement up to 600V as well as diagnostic measurement functions.

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

Insulation Resistance measurement
- ☑ Measuring range up to 5 TΩ
- ☑ Programmable timer 1s ~ 30 min.
- ☑ Capacitance measurement up to 50 _F.
- ☑ Programmable test voltages 250V ~ 5kV.

Step Voltage measurement
- ☑ 5 test voltage steps automatically set within selected test voltage range.
- ☑ Programmable timer 1s ~ 30 min / step.

Withstand voltage measurement
- ☑ Programmable ramp test voltage 250V~ 5kV.
- ☑ High resolution ramp (approx. 20V / step).
- ☑ Leakage current measurement.
- ☑ Programmable threshold current 1uA ~ 1.4mA.

Voltage and frequency measurements
- ☑ Up to 600 V AC/DC, 45~65 Hz.

Diagnostic measurements
- ☑ Measured on DUT are discharge current, voltage
- ☑ and capacitance.
- ☑ Calculated polarization index.
- ☑ Calculated dielectric discharge ratio.

voltages can be supplied under request

APPLICATIONS

Insulation Resistance Measurements on:

- Power Transformers
- Distribution Transformers
- Instrument Transformers
- Rotating Machines
- Bushings
- Cables
- Surge Arresters
- Insulation systems

TECHNICAL SPECIFICATIONS

Resistance range	0.01 MΩ…5 TΩ	± 5 % rdg ± 3 dig.
Capacitance range	0… 50 _F	± 5 % rdg ± 2 dig.
Leakage current	0… 1.4 mA	± 3 % rdg ± 3 dig.
Withstand test range	0… 5500 V	± 3 % rdg ± 4(V
AC/DC voltage range	0… 600 V	± 3 % rdg ± 3
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
Stepping	50 V steps	
Input resistance	3 MΩ	
Interface	RS 232, optical isolated	
Built-in memory	1000 measurement results	
Display	Dot matrix LCD, 160x1: backlight	
Warnings	Visual and Sound	
Overvoltage category	EN 61010 cat. III 600 V	
Protection	IP 54	
Pollution degree	2	
Operating temperature	-10… +50°C	
Storage temperature	-20… +70°C	
Humidity	5… 95% r.h., non-condensing	
Mains power supply (type 5478-A)	115 V AC +6/-10%, 45… 65 Hz, 10 VA	
Mains power supply (type 5478-B)	230 V AC +6/-10%, 45… 65 Hz, 10 VA	
Re-chargeable battery	6 x 1.2… 1.5 V, NiCd or NiMH, IEC LR14	
Weight (incl. batteries)	2.3 kg (5.1 lbs)	
W x H x D	265 x 110 x 185 mm (10.4” x 4.3” x 7.3”)	

BENEFITS

Guard terminal eliminates surface leakage from the measurement.
Battery or mains operation, built-in battery charger.
Data exchange to external PC over built-in RS232 interface and supplied application software.
Lightweight, rugged and reliable design.
Automatic discharge of capacitive loads.
User-friendly operation allows simple, fast and safe measurements
even by unskilled operators.
Five different measuring modes in one instrument ensure cost-effective measurement.

SCOPE OF SUPPLY

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



ORDER INFORMATION

TΩMeter 5478-A with 115V Mains power supply
TΩMeter 5478-B with 230V Mains power supply

RELATED HAEFELY HIPOTRONICS PRODUCTS

Transformer Turns Ratio Meter **2795**



MIDAS 2880
Mobile Insulation Diagnosis & Analyzing System



High Current Resistance Meter **2291** and **2292**



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HAEFELY HIPOTRONICS has a policy of continuous product improvement. Therefore we reserve the right to change design and specification without notice.