

## Contents

Multimeter with leads  
2 x AAA batteries  
Instruction manual

## Technical Specifications

Max. voltage between terminal and earth: CAT III, 500V (AC/DC)

Max. display: 4000 counts (3<sup>3</sup>/<sub>4</sub> digit)

LCD display: Yes

Measurement mode: Auto-range

Sampling rate: 3 times a second

Maximum voltage measurement: 500V (AC/DC)

Maximum over voltage warning: > 500V (AC) / > 500V (DC)

Resistance measurement: 0 to 18 Mohm (approx.)

Continuity check: Less than 50Ω with LED indication and audible sound

Audible sound: Yes

Auto power off (APO): 5 mins. (approx)

Low battery indication: Yes

Freeze/Hold data: Yes

Operation battery type: 2 x AAA batteries

Power consumption (approx.): < 30mA


Standby current: < 5μA

Product dimension (excluding test leads): 152mm(h) x 81mm(w) x 41mm(d) approx.


Product net weight (with battery and test leads): 242 grams. (approx.)

Test leads: Fitted with the meter









## Measurement accuracy

 True RMS AC Voltage	Range	Resolution	Accuracy
	4V	0.001V	±0.6% of rdg ±3 digits
	40V	0.01V	±0.6% of rdg ±3 digits
	400V	0.1V	±0.6% of rdg ±3 digits
	500V	1V	±0.6% of rdg ±3 digits

 DC Voltage	Range	Resolution	Accuracy
	4V	0.001V	±0.6% of rdg ±2 digits
	40V	0.01V	±0.6% of rdg ±2 digits
	400V	0.1V	±0.6% of rdg ±2 digits
	500V	1V	±0.6% of rdg ±2 digits

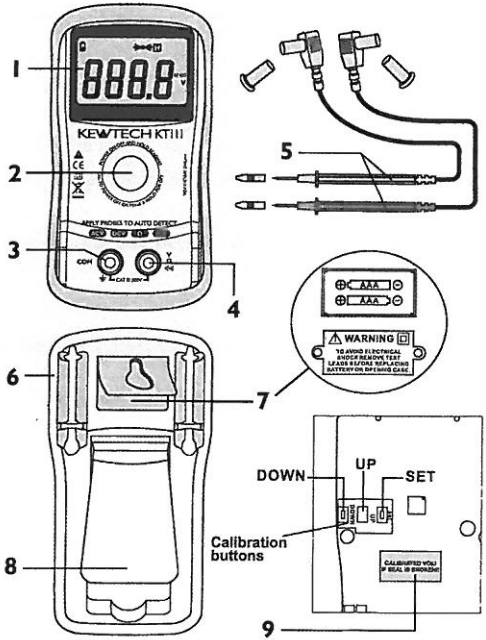
 Resistance	Range	Resolution	Accuracy
	3.999KΩ	0.001KΩ	±0.6% of rdg ±2 digits
	39.99KΩ	0.01KΩ	±0.6% of rdg ±2 digits
	399.9KΩ	0.1KΩ	±0.6% of rdg ±2 digits
	3.999MΩ	0.001MΩ	±1.5% of rdg ±2 digits
	18.00MΩ	0.01MΩ	±2.5% of rdg ±2 digits

## Key to symbols and units

	Alternating voltage	AUTO	Auto range / Measure
	Direct voltage	CAT III	Overvoltage CAT III 3C
	Volt (unit of electric potential)		Ground potential
	Negative	OL	Over range (= over flo
	Freeze / Hold reading		Continuity check
KΩ	Kilo Ohm		Low battery display
MΩ	Mega Ohm		

## Component descriptions

- 1 Liquid Crystal Display
- 2 Power/Hold button- press & hold 3 secs. to power ON or OFF. Press once to HOLD/FREEZE reading
- 3 COM (-) Terminal input for black test lead
- 4 V Ω (⎓) Terminal input for red test lead
- 5 Test leads
- 6 Holster
- 7 Battery compartment. To replace the battery remove the holster and then loosen the screws on the bottom cabinet
- 8 Foldable stand
- 9 Calibration protected seal. DO NOT REMOVE.



- Also designed to measure resistance values of up to 18 Mohm approx.
- Continuity check with buzzer sound < 50Ω approx.

Operation is only permitted with the stated battery type.

The measuring instrument must not be operated when battery compartment is open.

Measuring in damp rooms or under following unfavorable ambient conditions is not advisable:

- Wetness or high humidity
- Dust and flammable gases; vapors or solvent
- Thunder storms or similar conditions such as strong electrostatic fields etc.

Any use other than the one described above will damage the product. Moreover, this involves dangers such as short circuit, fire, electric shock, etc. No part of the product must be modified or rebuilt!

The multimeter indicates measured values on the digital display. The measuring value display of the multimeter comprises 4000 counts.







**The safety instructions must be followed unconditionally.**

## Safety instructions

- ⚠ Please read the operating instructions carefully before using the product for the first time as they include important information necessary for correct measurement.
- ⚠ The guarantee becomes null and void when damage has incurred as a result of non-compliance with the operating instructions! We do not assume any liability for any damage arising as a consequence. We will also not assume any responsibility for damage to assets or for personal injury caused by improper handling or failure to observe the safety instructions.

This device left the manufacturer's factory in a safe and perfect condition.

### Please note the following symbols:

-  A triangle containing an exclamation mark indicates important information in these operating instructions which is to be observed without fail.
-  A triangle containing a lightning symbol warns of danger of an electric shock or of the impairment of the electrical safety of the device.
-  The 'hand' symbol indicates special information and advice on operation of the device.
-  This product has been CE-tested and meets the necessary European guidelines.
-  Class 2 insulation (double or reinforced insulation).
- CAT III** Excess voltage Category III for measurements in building installation (e.g. outlets). This category also contains all lower categories.
-  Ground potential.

The unauthorized conversion and/or modification of the unit is inadmissible because of safety and approval reasons (CE).

Consult an expert when in doubt about the operation, the safety or the connection of the device.

Measuring instruments, accessories and packing materials must be kept away from the children's reach. They may become hazardous.

In commercial and industrial facilities the regulations for the prevention of accidents as laid down by the professional trade association for electrical equipment and devices need to be observed.

In schools, training centers, computer and self-help workshops, handling of measuring instruments must be supervised by trained personnel in a responsible manner.

The voltage between the measuring instrument and earth must never exceed CAT III, 500 V (AC / DC).

Take special care when dealing with voltages exceeding 25V AC or 35V DC! Even at these voltages it is possible to get an electric shock if you touch electric conductors.

Check the measuring device and its measuring lines for damage before each measurement. Never carry out any measurements if the protecting insulation is torn or ripped off etc.

To avoid electric shock, make sure not to touch the connections/measuring points

either directly or indirectly during or after measurement.



Also during measurements, do not hold test probes beyond the grip range markings.

Do not use the multi meter: • during, before or immediately after thunder and lightning (thunder strike/high-energy over voltages), please make sure that your hands, shoes, clothes, the floor, switches and switching components all are dry. • Immediately after it has been taken from a cold to a warm environment, condensation water that forms might destroy your device. Switch Off the unit until it has reached room temperature. Avoid operation near strong magnetic or electromagnetic fields. This may falsify the measured values.



In case of the following situations safe operation of the unit is no longer possible, so disconnect the unit immediately and secure it against inadvertent operation: • the unit does not operate any longer, • the unit was stored under unfavorable conditions for a long period of time or • the unit has been subjected to considerable stress in transit.

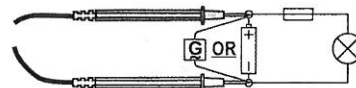
Again please read all the safety instructions in each chapter of these instructions.

## Measurements

-  **Do not exceed the maximum permitted input values. Do not directly touch circuits or parts of circuits being tested if there could be voltages higher than 25V ACrms or 35V DC present within them.**
-  **Before measuring, check the test leads for damage such as, for example, cuts or cracks. Defective test leads must not be used.**

**Voltage measuring "V"** Proceed as follows to measure AC/ DC voltages:

- Connect the two test probes to the object to be measured (battery, circuit etc). The red measuring tip indicates the positive pole, the black measuring tip the negative pole.
- The polarity of the respective measuring value is indicated on together with the current measuring value.  As soon as a minus "-" appears for the direct voltage in front of the measuring value, the measured voltage is negative (or the measuring tips have been reversed).  Internal connected and input impedance is > 10M Ohm.



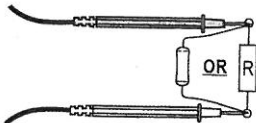
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## Resistance / Continuity measuring $K\Omega / M\Omega$

**⚠ Make sure that all circuit parts, switches, components and other measuring objects are disconnected from the voltage at all times.**

Proceed as follows to measure the resistance:

- Touch measuring probes of test leads with each other for continuity check. The reading on display must be approximately  $0.000 K\Omega$ .
- Now connect the measuring probes to the object to be measured. As long as the object to be measured is not high-resistive or interrupted, the measured value will be indicated on the display. The display shows in " **$K\Omega$** " and **buzzer sounds when the circuit is less than  $0.050 K\Omega$  approx.**
- As soon as "OL" Over range (= overflow) appears on the display, you have exceeded the measuring range or the measuring circuit has been interrupted.



## Switching Off Unit

Unit can be switched off in two ways, Manual or Auto:

- Manual switch Off- press and hold button 2/3 secs, the unit will switch off.
- Auto switch off - the unit will switch off automatically after 5 minutes.

## Troubleshooting

You have purchased a state of the art, reliable product. Nevertheless, problems or faults may occur. The following is a description of how you can eliminate possible malfunctions yourself. **⚠ Always adhere to the safety instructions.**

*Error*

The multimeter does not function.

No measuring value change.

*Possible cause*

Are the batteries dead? Check the status.

Is the wrong measuring function active?

**⚠ Other than battery replacement there are no user serviceable parts - do not open the device. Product specifications subject to change without notice.**

For further information:

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