

# AMPROBE® MT-1000 MultiTest 1000 Megohmmeter and Ground Resistance Tester



## Megohmmeter functions:

- ▶ Tests insulation of wires, cables, transformers and electrical motors
- ▶ Selectable test voltages up to 1000V
- ▶ Programmable timer to perform the Dielectric Absorption Ratio Test
- ▶ Sensitive Ohmmeter for checking resistance of motor windings
- ▶ Selectable polarization of ohmmeter for checking grounding continuity
- ▶ Automatic voltmeter protects against misuse on hazardous energized systems

## Ground Resistance and Resistivity functions:

- ▶ Measures Earth ground resistance - 3 point (fall of potential) or 2 point tests
- ▶ Automatically calculates resistivity - 4 point test
- ▶ Automatic voltage measurement prevents false measurements
- ▶ Automatically applies three testing frequencies for the most accurate readings
- ▶ Test leads, auxiliary electrodes, PC software and CT are included for a complete instrument
- ▶ Auto ranging
- ▶ 2MB of internal memory to store measurements
- ▶ RS-232 download to a personal computer
- ▶ Safety: CAT III 600V phase to phase, CAT III 300V Phase to ground

### MEGOHMMETER

Features	Range & Resolution	Basic Accuracy
Insulation resistance with 50 VDC test voltage	0.01-19.99, 49.9	+/- (2% Reading + 2 digits)
	49.9 - 99.9M	+/- (5% Reading + 2 digits)
Insulation resistance with 100 VDC test voltage	0.01-19.99, 99.9	+/- (2% Reading + 2 digits)
	99.9 - 199.9M	+/- (5% Reading + 2 digits)
Insulation resistance with 250 VDC test voltage	0.01-19.99, 199.9, 249	+/- (2% Reading + 2 digits)
	249 - 499 M	+/- (5% Reading + 2 digits)
Insulation resistance with 500 VDC test voltage	0.01-19.99, 199.9, 499	+/- (2% Reading + 2 digits)
	499 - 999 M	+/- (5% Reading + 2 digits)
Insulation resistance with 1000 VDC test voltage	0.01-19.99, 199.9, 999	+/- (2% Reading + 2 digits)
	999 - 1999 M	+/- (5% Reading + 2 digits)
Low Resistance (without timer)	0.01-19.99, 99.9	+/- (2% Reading + 2 digits)
Low Resistance (with timer)	0.01-9.99	+/- (2% Reading + 2 digits)

### GROUND RESISTANCE

Features	Range & Resolution	Basic Accuracy
Ground resistance	0-19.99, 199.9, 1999	+/- (5% Reading + 3 digits)
	0.6- 125.6 m	
Ground resistivity	0.125-1.256, 19.99, 199.9 k m	+/- (5% Reading + 3 digits)

Optional Accessories	Part Number
USB to RS-232 Adapter	RS-USB



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Replacement Parts (supplied with product)	Part Number
Instrument carrying case	CC-MT1
Carrying case containing: 4 earth rods and 4 test leads (banana – alligator clip)	GP-2CON
Special download cable	C2001
Test leads set (4 test leads, 4 alligator clips, 2 test probes)	MTL-MT1
PC Software_Toplevelink	www.amprobe.com
Instruction Manual	www.amprobe.com
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## TECHNICAL SPECIFICATIONS

### TECHNICAL FEATURES

Accuracy is indicated as [% of reading + number of digits]. It refers to the atmospheric conditions listed in the "ENVIRONMENT" paragraph.

Test Mode	Measuring range ( )	Resolution ( )	Accuracy
AUTO,R+TIMER,R-TIMER	0,01 – 19,99	0,01	±(2% rdg + 2 dgt)
	20,0 – 99,9	0,1	

Test current >200mA DC up to 5W (include the resistance of the calibration)  
 Test current resolution 1mA  
 Open circuit Test Voltage 6V < V0 < 12V

### Insulation Resistance ( $R_{ISO}$ )

Test Voltage	Measuring Range ( )	Resolution ( )	Accuracy
50	0,01 - 19,99	0,01	±(2% rdg + 2 dgt)
	20,0 - 49,9	0,1	
	50,0 - 99,9	0,1	±(5% rdg + 2 dgt)
100	0,01 - 19,99	0,01	±(2% rdg + 2 dgt)
	20,0 - 99,9	0,1	
	100,0 - 199,9	0,1	±(5% rdg + 2 dgt)
250	0,01 - 19,99	0,01	±(2% rdg + 2 dgt)
	20,0 - 199,9	0,1	
	200 - 249	1	±(5% rdg + 2 dgt)
	250 - 499	1	
500	0,01 - 19,99	0,01	±(2% rdg + 2 dgt)
	20,0 - 199,9	0,1	
	200 - 499	1	±(5% rdg + 2 dgt)
	500 - 999	1	
1000	0,01 - 19,99	0,01	±(2% rdg + 2 dgt)
	20,0 - 199,9	0,1	
	200 - 999	1	±(5% rdg + 2 dgt)
	1000 - 1999	1	

### Automatic selection of the measuring range

Open circuit voltage Rated voltage test -0% +10%  
 Short circuit current <6,0mA with 500V set  
 Rated measuring current >2,2mA with 500V on 230kW  
 1mA a 1KW x VNOM ( 500 V)

**Earth resistance measurement with voltamperometric method**

Measuring range (V)	Resolution (V)	Accuracy
0.06 ÷ 19,99 Wm	0,01 m	±(5% rdg + 3 dgt)
20.0 ÷ 199.9 Wm	0.1 m	
200 ÷ 1999 Wm	1 m	
2,00 ÷ 19,99 kWm	0.01 k m	
20.0 ÷ 125,5 kWm (*)	0.1 k m	

Test current <10mA 77,5Hz  
Open load test voltage <20V RMS

**AC Voltage**

Measuring range (V)	Resolution (V)	Accuracy
0 ÷ 460	1	±(3% rdg + 2 dgt)

**Earth resistance measurement with voltamperometric method**

Measuring range (V)	Resolution (V)	Accuracy
0,01 ÷ 19,99	0,01	±(5% rdg + 3 dgt)
20,0 ÷ 199,9	0,1	
200 ÷ 1999	1	

Test current <10mA 77,5Hz  
Open load test voltage <20V RMS

**SAFETY STANDARDS**

The instrument complies with:  
Product norms: EN 61010-1 + A2(1997)  
IEC61557-1,-2,-3,-4,-5,-6  
Insulation: Class 2,double insulation  
Pollution level: 2  
Inside use; max height: 2000m  
Overvoltage category: CAT III 460V- T1-T2-T3-T4 / 265V~ to earth

**GENERAL SPECIFICATIONS**

Mechanical features  
Dimensions: 222(L) x 165(La) x 105(H)mm  
Weight (batteries included): approx.1200g

**POWER SUPPLY**

Battery type: 6 batteries 1.5 V – LR6 – AA – AM3 – MN 1500  
Low battery indication: The symbol is displayed when the battery voltage is too low.  
Battery life: About 40 hours in stand-by or  
500 LowW tests or  
250 RISO tests 500V/500kW or  
1000 Loop,phase sequence tests  
300 Earth or r tests.

**Display:** LCD custom 65mmx65mm

**Memory:** 350 tests

**Serial interface:** opto-isolated RS232 to download stored data to a PC.

**ENVIRONMENTAL WORKING CONDITIONS**

Reference temperature: 23° ± 5°C  
Working temperature: 0°C ÷ 40 °C  
Relative humidity allowed: <80%  
Storage temperature: -10 ÷ 60 °C  
Storage humidity: <80%

**EMC**

This instrument was designed in compliance with the EMC standards in force and its compatibility has been tested for EN61326-1 (1998) + A1 (1999).

This instrument conforms to directive for CE standards.

**THIS INSTRUMENT COMPLIES WITH THE REQUIREMENTS OF THE LOW VOLTAGE DIRECTIVES 73/23/CEE AND EMC 89/336/CEE,AMENDED WITH 93/68/CEE.**

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