

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)
Insulation resistance with 100 VDC test voltage	49.9 - 99.9 MΩ	+/- (5% Reading + 2 digits)
Insulation resistance with 250 VDC test voltage	0.01-19.99, 99.9	+/- (2% Reading + 2 digits)
Insulation resistance with 500 VDC test voltage	99.9 - 199.9 MΩ	+/- (5% Reading + 2 digits)
Insulation resistance with 1000 VDC test voltage	0.01-19.99, 199.9, 249	+/- (2% Reading + 2 digits)
Low Resistance (without timer)	249 - 499 MΩ	+/- (5% Reading + 2 digits)
Low Resistance (with timer)	0.01-19.99, 199.9, 499	+/- (2% Reading + 2 digits)
	499 - 999 MΩ	+/- (5% Reading + 2 digits)
	0.01-19.99, 199.9, 999	+/- (2% Reading + 2 digits)
	999 - 1999 MΩ	+/- (5% Reading + 2 digits)
	0.01-19.99, 99.9 Ω	+/- (2% Reading + 2 digits)
	0.01-9.99 Ω	+/- (2% Reading + 2 digits)

GROUND RESISTANCE

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

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





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

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 Toplink	www.amprobe.com
Instruction Manual	www.amprobe.com
Instrument carrying case	CC-MT1
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Instruction Manual	www.amprobe.com

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 (Ω)	Resolution (Ω)	Accuracy
AUTO, R+, TIMER, R-TIMER	0,01 – 19,99	0,01	$\pm (2\% \text{ rdg} + 2 \text{ dgt})$
	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 (Ω)	Resolution (Ω)	Accuracy
50	0,01 - 19,99	0,01	$\pm (2\% \text{ rdg} + 2 \text{ dgt})$
	20,0 - 49,9	0,1	
	50,0 - 99,9	0,1	$\pm (5\% \text{ rdg} + 2 \text{ dgt})$
100	0,01 - 19,99	0,01	$\pm (2\% \text{ rdg} + 2 \text{ dgt})$
	20,0 - 99,9	0,1	
	100,0 - 199,9	0,1	$\pm (5\% \text{ rdg} + 2 \text{ dgt})$
250	0,01 - 19,99	0,01	$\pm (2\% \text{ rdg} + 2 \text{ dgt})$
	20,0 - 199,9	0,1	
	200 - 249	1	$\pm (5\% \text{ rdg} + 2 \text{ dgt})$
500	250 - 499	1	
	0,01 - 19,99	0,01	$\pm (2\% \text{ rdg} + 2 \text{ dgt})$
	20,0 - 199,9	0,1	
1000	200 - 499	1	$\pm (5\% \text{ rdg} + 2 \text{ dgt})$
	500 - 999	1	
	0,01 - 19,99	0,01	$\pm (2\% \text{ rdg} + 2 \text{ dgt})$
	20,0 - 199,9	0,1	
	200 - 999	1	$\pm (5\% \text{ rdg} + 2 \text{ dgt})$
	1000 - 1999	1	

Automatic selection of the measuring range

Open circuit voltage
 Short circuit current
 Rated measuring current

Rated voltage test -0% +10%
 < 6,0mA with 500V set
 > 2,2mA with 500V on 230kW
 1mA a 1KW x V_{NOM} (π 500 V)

Earth resistance measurement with voltamperometric method

Measuring range (V)	Resolution (V)	Accuracy
0.06 ÷ 19.99 Wm	0.01 Ωm	±(5% rdg + 3 dgt)
20.0 ÷ 199.9 Wm	0.1 Ωm	
200 ÷ 1999 Wm	1 Ωm	
2.00 ÷ 19.99 kWm	0.01 kΩm	
20.0 ÷ 125.5 kWm (*)	0.1 kΩm	

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:

Insulation:

Pollution level:

Inside use; max height:

Overvoltage category:

EN 61010-1 + A2(1997)

IEC61557-1,-2,-3,-4,-5,-6

Class 2,double insulation

2

2000m

CAT III 460V- T1-T2-T3-T4 / 265V- to earth

GENERAL SPECIFICATIONS

Mechanical features

Dimensions:

Weight (batteries included):

222(L) x 165(La) x 105(H)mm

approx.1200g

POWER SUPPLY

Battery type:

Low battery indication:

Battery life:

500 LowW tests or

250 RISO tests 500V/500kW or

1000 Loop,phase sequence tests

300 Earth or r tests.

6 batteries 1.5 V – LR6 – AA – AM3 – MN 1500

The symbol is displayed when the battery voltage is too low.

About 40 hours in stand-by or

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.**

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



SPX

ATP ADVANCED TEST PRODUCTS

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