MACROTEST G1&G2

I'm pure technology.
Touch me, please.

Clear answer.
Complying o **not**.

Save time!
You will take
half time!

Color Touch Screen
with icon intuitive
graphics

Wi-Fi
and USB

kW
Power
measurement

App HTanalysis
for iOS™
and Android™

HT Cloud
Share.
Whenever,
whatever and
wherever*

You can enter
voice notes,
text notes
and pictures*

100%
"Made in Italy"
technology
and quality

- **One instrument for all electrical safety tests** according to **IEC/EN61557-1.**
- **Earth resistance** with 2- or 3-pole **volt-ampere method** in TT, TN and IT systems, **non-trip earth loop impedance measurement.**
- **Measurement of electrical parameters in single phase installations** (V, A ,W,VAR,VA, PF)

* Using HTanalysis App for iOS™ or Android™ on Tablet or Smartphone. The App can be downloaded for free on AppStore™ or Playstore™

- **Continuity** measurement of protective conductors.
- **Soil resistivity.**
- **Insulation resistance** measurement.
- **Stackless earth ground resistance measurement** with T2100 (optional).

** Optional accessory RCDX10 for testing industrial RCDs up to 10A.

Earth Ground Resistance

The **Macrotest Series** easily measures **earth ground** (2 and 3 Point Method) and **soil resistivity** (4 Point Method) with an easy to understand **graphical user interface** and **color touchscreen**.
The meter can **store** internally **up to 999 measurements**. The included software enables **easy data transfer to a computer, tablet** or **phone** via **built-in Wi-Fi** or **USB** connection where it can be archived or used to **generate reports**.

The **HTAnalysis application** allows users, in **real time**, to **view, analyze**, **upload** and **share measurements** on the **HT Cloud**. This is **a free app** that is available to all.
The **Macrotest Series** provides a **complete set of easy to use measurements**.

The Macrotest Series utilizes the **three point test** (fall of potential), which measures **earth ground resistance** as required by **equipment manufacturer specifications** and as mandated by **national code requirements** for proper grounding. The **two point test** is used to test **grounding wires resistance** and **connection points resistance** between ground system elements (i.e. wires and electrodes). The tester can also be used to **test soils** for a **new ground system design** with the 4-point.

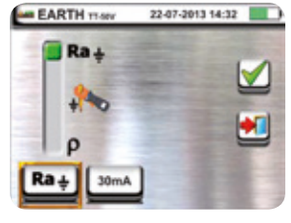
More than one earth.

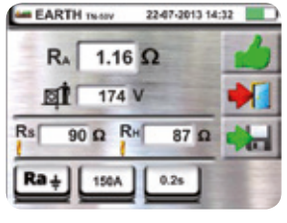
In addition to volt ampere method other testing modes can be adopted as follows:

- **Stackless earth ground resistance measurement with T2100 (optional)**
  MacrotestG3 adopts an innovative method for earth resistance measurement eliminating the worry of finding a place for auxiliary earth rods. Earth resistance measurement will be easier thanks to an algorithm HTEarth storing all measurements effected with clamp T2100 and calculating earth resistance value without disconnecting rods.

- **Soil resistivity**
  It measures soil resistivity (ρ) with 4-pole Wenner method.

Earth resistance measurement by Volt-ampere method



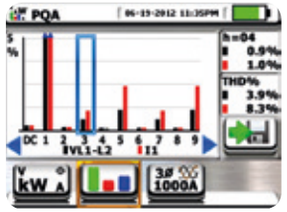


Measurement with clamp T2100

Power
and Load Analysis

- **Single Phase** and **Three Phase** balanced systems
- **Voltage,Current and frequency** measurement
- **Active power, reactive power** and **apparent power** measurement
- **Cosphi**, **power factor** measurement
- **THD%** and **Harmonics analysis** up to 25th

Power Analysis



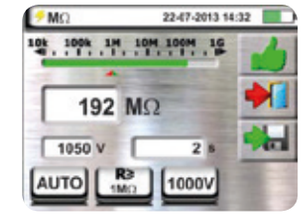
Harmonics Analysis up to 25th

Insulation resistance

- AUTO function
- Rapid setting of **limit values** and **test voltages through virtual keyboard.**
- Setting of **Timer for the test**
- **Test voltage 50, 100, 250, 500, 1000 VDC**

Selection of test voltage and minimum limit value

Selection of AUTO or TIMER measuring mode



Insulation measurement outcome

Continuity of protection conductors with 200mA

- **Calibration of measuring cables**
- Rapid setting of **limit values** through virtual keyboard.
- Setting of **Timer for the test**

Negative outcome

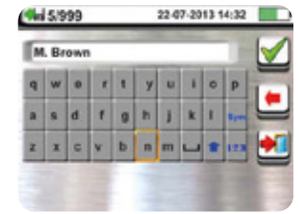
Selection of maximum resistance value

Selection of AUTO or TIMER measuring mode

Evolution of saving.

- Virtual keyboard to enter comments.
- Saving on file structure.
- **New detailed reports** with **TopView** software.

Saving with file tree



Entering comments on measurements


Transfer of data to PC by TopView software

HTanalysis™ and HTCloud™

App HTanalysis will change your working concept.
During testing you can:
- Dictate comments orally
- Associate a picture or a video to each measurement
- Review and customize your measurements

HTCloud will enable you to **share your measurements with everybody.**

HT™ Cloud

Cross references

Functions	MACROTEST G1	MACROTEST G2
Insulation with 1000VDC test voltage		•
Insulation with 500VDC test voltage		•
Insulation with 250VDC test voltage		•
Insulation with 50, 100VDC test voltage		•
Continuity of earth conductors with 200mA	•	•
Earth resistance with 2-pole and 3-pole	•	•
Earth resistance with ring mode	• **	• **
Ground resistivity with 4-pole	•	•
Measurement of electrical parameters (V, A, W, VAR, VA, PF)	• [1]	• [1]
Harmonic analysis up to 25th order and THD% calculation	• (25th) [1]	• (25th) [1]
Help on line	•	•
Internal memory to save measures	•	•
Optical/USB port for PC connection	•	•
Built-in WiFi communication interface	•	•
Hard carrying case	Optional	Optional

Kit
MACROTEST G1

Macrotest G1 ‹
T2100 Clamp ‹
VA504 Hard case ‹

Kit
MACROTEST G2

Macrotest G2 ‹
T2100 Clamp ‹
VA504 Hard case ‹

Tech specs

Continuity with 200mA

Measuring range: 0,01Ω÷99.9Ω
Accuracy: ±(5.0% reading + 3 digits)
Test current: > 200mA (R ≤ 2Ω)
Open circuit voltage: 4V ≤ V_0 ≤ 12V

Insulation resistance

Test voltage: 50, 100, 250, 500, 1000VDC
Measuring range: 0.01MΩ ÷ 99.9MΩ (50V)
0.01MΩ ÷ 199.9MΩ (100V)
0.01MΩ ÷ 499MΩ (250V)
0.01MΩ ÷ 999MΩ (500V)
0.01MΩ ÷ 1999MΩ (1000V)
Basic accuracy: ±(2.0% reading + 2 digits)
Test current: > 1mA on 1kΩ x Vnom (50,100, 250, 1kV)
> 2.2mA on 230kΩ @ 500V
Short circuit current: <6.0mA for each test voltage

Line/Loop Impedance (L-L, L-N, L-PE)

Measuring range: 0.01Ω ÷ 199.9Ω
Resolution: 0.01Ω min (0.1mΩ with optional accessory IMP57)
Accuracy: ±(5.0% reading + 3 digits)
Test voltage: 100÷265V (L-N) / 100÷460V (L-L), 50/60Hz
Maximum test current: 5.81A (@265V); 10.10A (@457V)
Selectable MCB protections: curves B, C, D, K
Selectable fuse protections: type aM and gG
Insulating material (test I2t): PVC, butyl rubber, EPR, XLPE

Earth resistance and ground resistivity

Measuring range R: 0.01Ω ÷ 49.99kΩ
Measuring range: ρ 0.60Ωm÷3.14MΩm
Accuracy: ±(5.0%reading + 3digits)
Test current: 10mA, 77.5Hz
Open circuit voltage: <20Vrms

Measurement of environmental parameters (with optional probes)

Air temperature (°C/°F): -20.0 ÷ 60.0 °C / -4.0 ÷ 140.0 °F
Relative humidity: 0% ÷ 100%RH
Illuminance (Lux): 0.001lux ÷ 20klux
Accuracy: ±(2.0% reading + 2 digits)

Measurement of main parameters and harmonics (PQA)

AC TRMS Voltage

Range (V)	Resolution (V)	Accuracy
15.0÷459.9	0.1 V	± (1.0%rdg + 1dgt)

Allowed crest factor ≤ 1,5 • Frequency 42.5 ÷ 69.0 Hz

Frequency

Range (Hz)	Resolution (V)	Accuracy
42.5÷69.0	0.01 V	±(2.0%rdg + 2dgt)

Allowed voltage: 15.0 ÷ 459.9V • Allowed current: 5%FS clamp ÷ FS clamp

AC TRMS Current

FS clamp	Range (A)	Resolution (A)	Accuracy
≤10A	5% FS ÷ 9.99	0.01	1ph: ±(1.0%rdg + 3dgt) 3ph: ±(2.0%rdg + 5dgt)
10A ≤ FS ≤ 200	5% FS ÷ 199.9	0.1	
200A ≤ FS ≤ 3000	5% FS ÷ 2999	1	

Range: 5 ÷ 999.9 mV • Values under 5mV are zeroed • Allowed crest factor ≤ 3 • Frequency: 42.5 ÷ 69.0 Hz

Active Power
(@ 230V in 1Ph systems, 400V in 3 Ph systems, cosphi=1, f=50.0Hz)

FS clamp	Range (kW)	Resolution (kW)	Accuracy
≤10A	0.000 ÷ 9.999	0.001	1ph: ±(2.0%rdg + 5dgt) 3ph: ±(2.5%rdg + 8dgt)
10A ≤ FS ≤ 200	0.00 ÷ 999.99	0.01	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9	0.1	
1000A ≤ FS ≤ 3000	0 ÷ 999.9	1	

Reactive Power
(@ 230V in 1Ph systems, 400V in 3 Ph systems, cosphi=0, f=50.0Hz)

FS clamp	Range (kVAr)	Resolution (kVAr)	Accuracy
≤10A	0.000 ÷ 9.999	0.001	1ph: ±(2.0%rdg + 7dgt) 3ph: ±(3.0%rdg + 8dgt)
10A ≤ FS ≤ 200	0.00 ÷ 999.99	0.01	
200A ≤ FS ≤ 1000	0.0 ÷ 999.9	0.1	
1000A ≤ FS ≤ 3000	0 ÷ 999.9	1	

Power Factor
(@ 230V in 1Ph systems, 400V in 3 Ph systems, f=50.0Hz)

Range	Resolution	Accuracy
0.70c÷1.00÷0.70i	0.01	±(4.0%rdg + 10dgt) if I ≤ 10% FS ±(1.0%rdg + 7dgt) if I >10% FS

Power Factor
(@ 230V in 1Ph systems, 400V in 3 Ph systems, f=50.0Hz)

Range	Resolution	Accuracy
0.70c÷1.00÷0.70i	0.01	±(4.0%rdg + 10dgt) if I ≤ 10% FS ±(1.0%rdg + 7dgt) if I >10% FS

Voltage Harmonics
(@ 230V in 1Ph systems, 400V in 3 Ph systems, f=50.0Hz)

Range (%)	Resolution (%)	Order	Accuracy
0.1÷100.0	0.1	01÷25	±(5.0%rdg + 5dgt)

Frequency of fundamental: 42.5 ÷ 69 Hz, DC accuracy not declared.

Current Harmonics (f=50Hz)

Range (%)	Resolution (%)	Order	Accuracy
0.1÷100.0	0.1	01÷9	±(5.0%rdg + 5dgt)
		10÷17	±(10.0%rdg + 5dgt)
		18÷25	±(15.0%rdg + 10dgt)

General specifications

Power supply	6x1.2V rechargeable type AA NiMH or 6x1.5V type AA alkaline
Battery life	> 550 test (alKaline)
Display	320x240 resistive color LCD with touch screen
Memory	999 locations, 3 marker levels
PC interface	optical/USB and Wi-Fi (with optional accessory C2013)
Dimensions (L x D x H)	225 x 165 x 75 mm / 8.8 x 6.5 x 2.9 in
Weight (including batteries)	1.2 kg / 2.5 lb
Safety	IEC/EN61010-1, double insulation
Pollution degree	2
Mechanical protection	CAT III 240V, max 415V among inputs
Reference standards	IEC/EN61557-1-2-3-4-5-6-7
Working temperature	0°÷ 40°C / 32°÷104°F
Working humidity	<80%RH
Storage temp.	-10°÷ 60°C / 14°÷140°F
Storage humidity	<80%RH

Standard accessories

- **C2033X** 3-banana to Shuko plug cable
- **KITGSC5** Kit including 4 cables, 4 alligator clips and 2 test leads
- **KITTERRNE** Soft carrying bag containing 4 cables and 4 earth rods
- **PT400** Stylus
- **BORSA2051** Soft carrying bag
- **TOPVIEW2006** PC software and optical-to-USB connection cable C2006
- **YABAT0003000** Rechargeable NiMH battery 1.2V, AA, 6 pcs
- **Quick user's guide**
- **User's manual** on CD-ROM
- **Calibration certificate** ISO9000

Optional accessories

- **HT96U** Transducer for AC currents (including leakage current) 0 ÷ 1, 0 ÷ 100, 0 ÷ 1000A AC
- **T2100** Earth ground clamp transducer
- **PR400** Remote switch probe
- **SP-0400** Free hands kit
- **606-IECN** Magnetic adapter for connection to screw heads

KITGSC5

PT400

YABAT0003000

C2033X

PR400

T2100

HT96U