  
**DATA LOGGERS**

**DATA LOGGERS**



**MAIN MEASUREMENTS**

**TRMS**

AC voltage in single-phase/three-phase systems

AC current in single-phase/three-phase systems

**MEMORY AND RECORDING**

Max number of simultaneously selectable parameters

Recording with selectable integration period

Indicative memory duration (single-/three-phase in days @ PI=5min)

Internal memory capacity

**DATA LOGGERS**

	XL421	XL422	XL423	XL424
•	•	•	•	•
-	-	-	• Single-phase	• Single-phase / three-phase
•	• Single-phase	• Single-phase / three-phase	-	-
1	1	3	1	3
1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min
455	455 / 1820*	455	455 / 1820*	
1MB	1MB	1MB	1MB	
<b>ADDITIONAL CHARACTERISTICS</b>				
Protection rating	IP65	IP65	IP65	IP65
Measurement category	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V
Power supply	2x Batteries AA	2x Batteries AA	2x Batteries AA	2x Batteries AA
Provided PC interface with software for Windows	•	•	•	•
Size (LxWxH) (mm)	120x80x43	120x80x43	120x80x43	120x80x43
Weight (batteries included)	500g	500g	500g	500g
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
<b>Order code</b>	<b>HV000421</b>	<b>HV000422</b>	<b>HV000423</b>	<b>HV000424</b>

\* According to battery duration.



TRMS

ORDER CODE HV000421 | HV000422

# XL421|XL422

TRMS SINGLE-PHASE AND THREE-PHASE CURRENT DATA LOGGER

XL421 and XL422 are **Data Loggers** capable of measuring and recording the true root mean square (TRMS) value of AC current up to 2500A AC in, according to the model **single-phase or three-phase**, electric systems for different applications (evaluation of load currents, rated powers of transformers, etc.). The devices have a comfortable mobile structure with integrated flex clamp jaws which allow surrounding also a big-sized cable or bar. Thanks to an advanced memory management algorithm it is possible to monitor a system even for a long time. The devices start recording with a **sampling period** which can be selected through software among 1, 6, 30 and 60 seconds and, when memory is almost full, the previously recorded values are "re-sampled" according to the subsequent value of the sampling period, thus freeing part of the memory; the devices then go on recording new values, using the new measuring interval. In this way, it is possible to keep the device recording up to **approximately 1 year according to the model**. Each recording is kept stored in the internal memory and can be **downloaded and managed by PC** always through a dedicated software. A special adhesive strap is also provided with the devices, which makes it possible to place them in any place in the installation where measuring is needed. The high protection rating (IP65) makes these devices fully reliable also under extreme operating conditions.



TRMS

ORDER CODE HV000423 | HV000424

# XL423|XL424

TRMS SINGLE-PHASE AND THREE-PHASE VOLTAGE DATA LOGGER

XL423 and XL424 are **Data Loggers** capable of measuring and recording the true root mean square (TRMS) value of Voltage up to 600V AC or, according to the model, in **single-phase or three-phase** electric systems, for different applications (evaluation of mains voltage, load unbalance, etc.). The devices have a comfortable mobile structure with integrated flex clamp jaws which allow surrounding also a big-sized cable or bar. Thanks to an advanced memory management algorithm it is possible to monitor a system even for a long time. The devices start recording with a **sampling period** which can be selected through software among 1, 6, 30 and 60 seconds and, when memory is almost full, the previously recorded values are "re-sampled" according to the subsequent value of the sampling period, thus freeing part of the memory; the devices then go on recording new values, using the new measuring interval. In this way, it is possible to keep the device recording up to **approximately 1 year according to the model**. Each recording is kept stored in the internal memory and can be **downloaded and managed by PC** always through a dedicated software. A special adhesive strap is also provided with the devices, which makes it possible to place them in any place in the installation where measuring is needed. The high protection rating (IP65) makes these devices fully reliable also under extreme operating conditions.



## Functions and characteristics

- TRMS single-phase current measurement (XL421)
- TRMS three-phase current measurement (XL422)
- Measuring range: 1 ÷ 2500A AC
- Accuracy: ±(1.0%reading+1 digit)
- Resolution: 1A
- Operating frequency: 50±6Hz, 60±6Hz
- Bandwidth: 3200Hz
- Sampling frequency: 64 spots in 20ms
- Integration period: 1s, 6s, 30s, 60s, 5min
- Memory capacity: 1Mbyte
- Serial interface: RS-232
- Integration period.....duration in days:
  - 1s.....5 (XL421) 1,5 (XL422)
  - 6s.....34 (XL421) 8 (XL422)
  - 30s.....170 (XL421) 42 (XL422)
  - 60s.....364\* (XL421) 91 (XL422)
  - 5min.....1820\* (XL421) 455\* (XL422)
- Front panel indication: LED diodes
- Power supply: 2x1.5V batteries type AA LR6
- Battery life: >6months (with loaded batteries)
- Safety: IEC/EN 61010-1
- Measurement category: CAT IV 600V (to earth)
- Insulation: Double insulation
- Pollution level: 2
- Mechanical protection index: IP65
- Max height: 2000m
- Max diameter of flex clamps: 174mm
- Size (LxWxH): 120x80x43 mm
- Weight (batteries included): approx. 0.5kg

\* According to battery duration

## Included accessories

VELCRO	Adhesive strap 50x70mm
TOPVIEW2004	Windows software for PC + serial cable C2004
BORSA 2000	Soft carrying bag (XL421)
BORSA75	Soft carrying bag (XL422)
	Batteries
	User Manual

## Optional accessories

C2009	RS232-USB adapter
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## Functions and characteristics

- TRMS single-phase voltage measurement (XL423)
- AC TRMS three-phase voltage measurement (XL424)
- Measuring range: 0 ÷ 600VAC
- Accuracy: ±(1.0%reading+1 digit)
- Resolution: 0,1V
- Operating frequency: 50±6Hz, 60±6Hz
- Bandwidth: 3200Hz
- Sampling frequency: 64 spots in 20ms
- Integration period: 1s, 6s, 30s, 60s, 5min
- Memory capacity: 1Mbyte
- Serial interface: RS-232
- Integration period.....duration in days:
  - 1s.....5 (XL423) 1,5 (XL424)
  - 6s.....34 (XL423) 8 (XL424)
  - 30s.....170 (XL423) 42 (XL424)
  - 60s.....364\* (XL423) 91 (XL424)
  - 5min.....1820\* (XL423) 455\* (XL424)
- Front panel indication: LED diodes
- Power supply: 2x1.5V batteries type AA LR6
- Battery life: >6months (with loaded batteries)
- Safety: IEC/EN 61010-1
- Measurement category: CAT IV 600V (to earth)
- Insulation: Double insulation
- Pollution level: 2
- Mechanical protection index: IP65
- Max height: 2000m
- Size (LxWxH): mm 120x80x43
- Weight (batteries included): approx. 0.5kg

\* According to battery duration

## Included accessories

KITXL424C	Set of 4 alligator clips
VELCRO	Adhesive strap 50x70mm
TOPVIEW2004	Windows software for PC + serial cable C2004
BORSA2000	Soft carrying bag
	Batteries and User Manual

## Optional accessories

C2009	RS232-USB adapter
606-IECN	Connector with magnetic terminal



# HTANALYSIS

## Artificial Intelligence.



With the latest-generation HT devices it is possible to interface with tablets and smartphones by using the HTAnalysis App. HTAnalysis is a professional software which allows displaying and consulting, on your mobile devices, measured and recorded data, and then share them with the HTCloud database. HTAnalysis allows generating professional reports complete with images, texts, videos and voice notes. By interfacing the device with your mobile device's display, the touch-screen interaction will allow quickly displaying a detailed report of the trend of the recorded quantities.

WITH  
**GSC60, MacroTestG3, G2, G1  
and CombiG2**

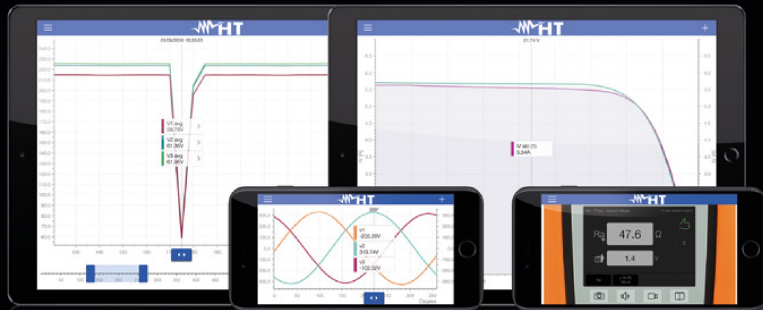
- Generate reports complete with photos, videos, text and voice notes.
- Archive reports in the HTCloud database.

WITH  
**SOLAR I-Ve, I-V 500w and I-V400w**

- Display and analyze the I-V curves downloaded from the instrument, attach photos, videos, text and voice notes.

WITH  
**GSC60, PQA820,  
and PQA819**

- Display voltage, current, power, harmonics, THD%, cosphi and frequency.
- Observe in real time all waveforms, vector diagrams and harmonics.
- Archive readings in the HTCloud database.



# HTCLOUD

## Share everything. When, how and where you like.

Install the HTAnalysis App to **access** the HTCloud database to archive and **share** measured and recorded data with colleagues and partners **from all around the world.**



# MULTIFUNCTION INSTALLATION TESTERS

**MULTIFUNCTION  
INSTALLATION  
TESTERS**



MACROTEST G3



MACROTEST G2



MACROTEST G1



GSC60



COMBI G2



COMBI 420/421



M75



M74



JUPITER



NEPTUNE



FULLTEST3

**RJ-45  
WIRE MAPPING**

**NEW**

**NEW**

**ELECTRIC SAFETY MEASUREMENTS**

**ELECTRIC VERIFICATIONS MAINS ANALYSES**

**ELECTRIC VERIFICATIONS MAINS ANALYSES**

**ELECTRIC VERIFICATIONS TRMS MULTIMETER**

**ELECTRIC DEVICES  
AND ELECTRIC  
PANELS**

TRMS	•	•	•	•	•	•	•	•	•	•	•	•
Insulation with voltage 50, 100, 250, 500, 1000VDC	•	•	-	•	•	•	• 250V, 500V	• 250V, 500V	-	•	•	•
Continuity of protective conductors with 200mA / 10A	• 200mA	• 200mA	• 200mA	• 200mA	• 200mA	• 200mA	• 200mA	• 200mA	-	• 200mA	•	•
Tripping time of RCDs type B, A, AC Standard, Selective and Delayed up to 1A	•	-	-	•	•	• Only A, AC standard and selective (up to 650mA for COMBI420)	• A = 30mA AC = 300mA Only standard	• A = 30mA AC = 300mA Only standard	• Only A, AC standard up to 300mA	-	•	•
Tripping current of type A, AC Standard up to 650mA	•	-	-	•	•	•	• A = 30mA AC = 300mA Only standard	• A = 30mA AC = 300mA Only standard	• Only A, AC standard 30mA	-	•	•
Tripping time and current of earth leakage relays type B, A, AC Standard, Selective and Delayed up to 10A	•***	-	-	•***	•***	-	-	-	-	-	-	-
Non-trip earth resistance	•	-	-	•***	•	•	•	•	•	-	•	•
Earth resistance by voltammetric method	•	•	•	•	-	-	-	-	-	-	-	-
Earth resistance by stakeless testing method	•**	•**	•**	•**	-	-	-	-	-	-	-	-
Ground resistivity by 4-wire method	•	•	•	•	-	-	-	-	-	-	-	-
Loop/Line impedance, Phase-Phase, Phase-Neutral, Phase-PE	•	-	-	•	•	•	-	-	•	-	•	•
Loop/Line impedance Phase-Phase, Phase-Neutral, Phase-PE with high resolution (0.1mΩ)	•*	-	-	•*	•*	•*	-	-	-	-	-	•
Measurement of percentage voltage drop on the line	•	-	-	•	•	-	-	-	-	-	-	-
Contact voltage	•	-	-	•	•	•	•	•	•	-	•	-
Wire mapping of LAN cables with RJ45 plug	-	-	-	-	-	-	•	•	-	-	-	-
Phase sequence	•	-	-	•	•	•	•	•	•	•	•	-
Leakage current with optional clamp meter	•	-	-	•	•	•	•	•	-	•	•	-
Dielectric strength with test voltage up to 5100V AC	-	-	-	-	-	-	-	-	-	-	-	•
Measurement of discharge time of internal capacitances	-	-	-	-	-	-	-	-	-	-	-	•
Measurement of Polarization Index (PI) and Dielectric Absorption Ratio (DAR)	-	-	-	-	-	-	-	-	-	•	-	-

**MAINS ANALYSIS**

Measurement of Voltage, Current, Active, Reactive, Apparent Power	• (1)	• (1)	-	• (3) with Recording	• (1)	• (1)	-	-	-	-	-	• (1)
Measurement of Cosphi, Power Factor	• (1)	• (1)	-	• (3) with Recording	• (1)	• (1)	-	-	-	-	-	• (1)
U/I harmonics up to the 49 <sup>th</sup> +THD% + Voltage anomalies	• 25 <sup>th</sup> no Anomalies	• 25 <sup>th</sup> no Anomalies	-	• (3) with Recording	• 25 <sup>a</sup>	• 49 <sup>a</sup>	-	-	• 25 <sup>th</sup> no Anomalies	• 25 <sup>th</sup> no Anomalies	-	-

**ADDITIONAL CHARACTERISTICS**

Measurement category	CAT IV 300V	CAT IV 300V	CAT IV 300V	CAT IV 300V to earth max 600 between inputs	CAT III 240V	CAT III 240V	CAT III 550V	CAT III 550V	CAT IV 600V CAT III 690V	CAT IV 600V CAT III 1000V	CAT III 300V CAT II 300V
DC/AC TRMS voltage and current, Frequency, Resistance, Continuity with buzzer	-	-	-	-	-	-	•	•	•	•	-
AUTOMATIC test (Ra, RCD, Insulation)	•	-	-	-	•	•	•	•	-	-	-
Measurement of environmental parameters (°C, °F, %RH, Lux)	•	-	-	• with Recording	•	•	-	-	-	-	-
Test with remote lead PR400	•	•	•	•	•	•	-	-	-	-	-
Help on line on the display	•	•	•	•	•	•	-	-	-	-	-
Internal memory	•	•	•	•	•	•	-	-	-	-	•
Optical/USB serial port for PC connection	•	•	•	•	•	•	-	-	-	-	• USB
Built-in WiFi connection and compatibility with HTANALYSIS App	•	•	•	•	•	-	-	-	-	-	-
Size (LxWxH) (mm)	222x162x57	222x162x57	222x162x57	222x162x57	222x162x57	222x162x57	240x100x45	240x100x45	175x85x55	175x85x55	400x300x170
Weight (batteries included)	1.2 kg	1.2 kg	1.2 kg	1.2 kg	1.2 kg	1.2 kg	450g	450g	420g	420g	15kg
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
<b>Order code</b>	<b>HV005036</b>	<b>HV005038</b>	<b>HV005037</b>	<b>HV000060</b>	<b>HV000062</b>	<b>HV000062</b>	<b>HV000075</b>	<b>HV000074</b>	<b>HR00JUPI</b>	<b>HR00NEPK</b>	<b>HV000003</b>

\* With optional accessory IMP57. \*\* With optional accessory clamp T2100. \*\*\* With optional accessory RCDX10. (1) Balanced single-phase or three-phase system.

ms mA **kWh** **MΩ**



ORDER CODE **HV00060**

# GSC60

A UNIQUE INSTRUMENT FOR MAINS ANALYSIS  
AND VERIFICATION OF ELECTRIC SAFETY

GSC60 is the only device in the world which can perform the verification of electric safety according to IEC/EN61557-1 and the analysis of single-phase/three-phase mains and electric consumption. IT has been designed to make the safety of electric system **visible, understandable and assessable** in a **simple and quick** way. Thanks to the new **operating system HTOS™ 2.0**, once measurement is complete, the operator receives from the device a message **OK - NOT OK** which communicates whether the part of the tested system is **compliant and, therefore, safe**. The user interface, totally renewed in HTOS™, allows setting and carrying out measurements in a few simple steps. All recorded data are **saved** and, for each kind of test, it is possible to **create folders and subfolders** and, with the virtual keyboard, **add comments and notes**. But, even better, through the FREE APP HTAnalysis, **compatible with iOS and Android**, the measurements carried out can be transferred via **Wi-Fi** onto **smartphone or tablet** and, thanks to this function, it is possible to attach a **picture, a video or a voice note** to every measurement. GSC60 is also a **three-phase mains and electric consumption analyzer** which is unique thanks to the APP HTAnalysis.



Power supply and on-board battery charger.



Flexible jaws for current measurement.

## Global Connection.

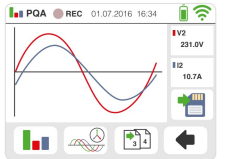
Thanks to WiFi capability you can easily transfer data and get through App **HTANALYSIS™**. You can check your test results, save them on **HTCloud™** or send them by email. Your working team will be always in touch.

## Full Batteries at All Times.

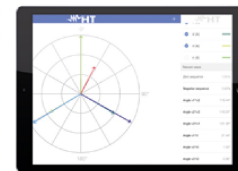
**GSC60** is so compact that a new power technology had to be designed to charge batteries. You just need to power the unit and it will charge the batteries. Or you can always start working by simply replacing them with standard AA batteries.

## HTOS™ Managing the Power.

**Get access through touchscWreen to your measurement.** Quickly set measurement parameters and press GO. Here it is, **HTOS™**, designed to make your work easier. Its' result options **OK** and **NOT OK** as well as its **Help OnLine** will make it your best partner and save you time.



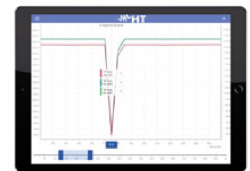
Example of display  
**Harmonics V-I**



Example of display  
**Real-time phasors**



Example of display  
**Waveforms V-I**



Example of display  
**Recording made  
(evident voltage interruptions)**

### Functions of Electric safety

- Insulation with test voltage 50, 100, 250, 500, 1000 VDC
- Continuity of protective conductors with 200mA
- Earth resistance by voltammetric method
- Resistance of the earth rods with clamp
- Ground resistivity by 4-wire method
- Overall earth resistance with no residual current protection tripping
- Line/Loop, Phase-Phase, Phase-Neutral, Phase-PE impedance
- Line/Loop, Phase-Phase, Phase-Neutral, Phase-PE impedance with high resolution (0.1 mΩ) with optional accessory IMP57
- Assumed short-circuit current
- Contact voltage
- Tripping time of General, Selective and Delayed RCDs
- Test current A, AC max 1A and type B max 300mA
- Test on RCDs with separate clamp jaw up to 10A
- RCD tripping current (Ramp test)
- Phase sequence
- Measurement of percentage voltage drop on the lines
- Test with remote switch probe PR400
- Leakage current (with optional clamp HT96U)
- Help on line on the display
- Internal memory for measured data saving
- Optical/USB serial port for PC connection
- Built-in WiFi communication interface

### Functions of Mains analysis

- 9 types of electric systems available: 1Φ-2 wires, 1Φ-centr. socket, 3Φ-3 wires, 3Φ-Aron, 3Φ-Δ Open, 3Φ-Y Open, 3Φ-2 el. 1/2, 3Φ-4 wires Y, 3Φ-High Leg.
- AC TRMS voltage in single-/three-phase systems up to 600V
- AC TRMS current in single-/three-phase systems up to 3000A
- Active, Reactive and Apparent Power/Energy
- Cosphi and Power Factor
- Voltage, Current, DC Power
- Measurement of neutral current
- Voltage dips and peaks on 20ms @50hz
- Voltage unbalance (NEG%, ZERO%)
- Measurements using external TA and TV
- Voltage/current waveforms
- Histograms of voltage/current harmonics and THD%
- Voltage/current vector diagram
- Periodical recording with selectable PI
- Max number of simultaneously selectable quantities 632
- Voltage/current harmonic analysis up to the 49<sup>th</sup>
- Calculation and recording of voltage/current THD%
- Indication of recording duration

### Included accessories

HTFLEX33E	AC flexible clamp for currents up to 3000A, diameter 174mm, 4 pcs
C2033X	3-banana to Schuko plug cable
UNIVERSALKITG3	Set of 4 cables, 4 alligator clips and 3 test leads
KITERRNE	Soft carrying bag containing 4 cables and 4 earth rods
PR400	Remote switch probe
PT400	Stylus
VA500	Rigid carrying case
YABAT0003000	Rechargeable NiMH battery 1.2V, AA, 6 pcs
A0060	Power Supplier/Battery Charger 100/230Vac - 15Vdc, 10W CAT IV
C7051	Power cable Shuko-Europlug ground-less 1.50mt
SP-0500	Set for slinging the instrument over one's shoulder
TOPVIEW2006	PC software and optical-to-USB connection cable C2006
	Quick user's guide
	User's manual on CD-ROM
	Calibration certificate ISO9000

### Optional accessories

HTFLEX35	AC flexible clamp for currents up to 3000A, diameter 274mm
HT96U	Clamp transducer AC 1-100-1000A/1V, diameter 54mm
HT98U	Clamp transducer DC 1000A/1V, diameter 50mm
HP30C2	Clamp transducer AC 200-2000A/1V, diameter 70mm
HP30C3	Clamp transducer AC 200-2000A/1V, diameter 70mm
HP30D1	Clamp transducer DC 1000A/1V, diameter 83mm
HT4003	Clamp transducer 400A AC, diameter 30mm
HT4004	Clamp transducer 100A AC/DC, diameter 32mm
HT4005N	Clamp transducer AC 0÷5A, 0÷100A diameter 20mm
HT4005K	Clamp transducer 200A AC, diameter 40mm
HT903	3x1-5A/1V box for external TA connection
IMP57	High resolution impedance measurement adapter
T2100	Earth ground clamp transducer for Stakeless measurements
606-IECN	Magnetic adapter for connection to screw heads
1066-IECN	Black connector for extensions (4mm banana)
RCDX10	Accessory for industrial RCDs up to 10A
VA504	Rigid transport case for device and clamp T2100
HT52/05	Transducer for temperature/humidity measurement
HT53/05	Transducer for illuminance measurement



YouTube



ORDER CODE HV005036

# MACROTESTG3

ADVANCED MULTIFUNCTION DEVICE FOR VERIFICATION OF ELECTRIC SAFETY OF DOMESTIC AND INDUSTRIAL ELECTRIC SYSTEMS (IEC/EN61557-1)

- **All verifications of electric safety** provided for by standards IEC/EN61557-1
- **Advanced Loop** Verification of magnetothermal protections, fuses and cable sizes.
- **Earth resistance by voltammetric method** with 2 or 3 poles in TT, TN and IT systems, **non-trip earth resistance measurement** and earth resistance with stakeless testing method with **clamp meter T2100** (optional). **Ground resistivity**.
- **Measurement of electric parameters in single-phase installations** (V, I, W, VAR, VA, PF)
- **Test of RCDs** type A, AC, B up to 1A, earth leakage relays with test current up to 10A (with optional accessory RCDX10).
- Measurement of **insulation resistance**.
- Measurement of **continuity** of protection conductors.
- Verification of **phase sequence (SEQ)** and **leakage currents**.
- **Measurement of environmental parameters** through external probes.

MacrotestG3 is a revolutionary device.

Its TFT colour display with **touch-screen** allows using this device in a completely new manner. **MacrotestG3 makes available on its display all possible variables to obtain a perfect measurement**; your task will only be to **"touch"** what you really want to measure: then simply leave the rest to Macrotest G3's micro-processor!

The device complies with **all requirements as regards the safety of electric systems: test of RCDs type A, AC also up to 1000 mA and type B; insulation, continuity, earth resistance tests** (this also with the aid of the optional clamp T2100).

With the appropriate programming guided by the touch-screen system, this device can test the **breaking capacity, tripping current, I2t relevant to magneto-thermal switches (MCB) with curves B, C, D, K and fuses type gG and aM!**

The device can be used with external probes for measuring environmental parameters such as air temperature/humidity, illuminance (Lux) further to measuring leakage currents, cosphi, power and harmonics, Loop/Line impedance and calculating the prospective short-circuit current with high resolution (0.1 mOhm) in TN systems with use of optional accessory IMP57.

**Cutting-edge management of measurement** with indication, at the end of each safety test, of **compliance or non-compliance with requirements** with simple symbols **OK** or **NOT OK**.



Power measurement, using the HTAnalysis™ App on tablet.



Start/stop measuring with remote lead PR400.



Measurement of leakage current with optional clamp HT96U.



Earth resistance measurement with clamp T2100.



Selection of RCD type and tripping current.



Zero-loop: compensation of the resistance of the test cables used for Loop impedance measurement.



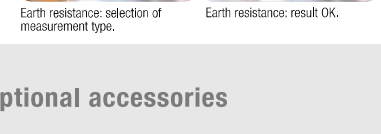
Power measurement.



Advanced Loop.



Earth resistance: selection of measurement type.



Earth resistance: result OK.

## Functions

- AUTO test (overall earth resistance test, RCD tests, insulation tests) on the outlets to be tested
- Insulation with voltage 50, 100, 250, 500, 1000VDC
- Continuity of protective conductors with 200mA
- Earth resistance by voltammetric method
- Earth resistance with stakeless testing method
- Ground resistivity by 4-wire method
- Non-trip earth resistance with no RCD tripping
- Line/Loop impedance, Phase-Phase, Phase-Neutral, Phase-PE
- Line/Loop impedance, Phase-Phase, Phase-Neutral, Phase-PE with high resolution (0.1 mΩ with optional accessory IMP57)
- ZEROLOOP function for a compensation of the resistance of the test cables used for Loop measurement
- Prospective short-circuit current
- Contact voltage
- Tripping time of General, Selective and Delayed RCDs.
- Test current A, AC max 1A and type B max 300mA.
- Test on earth leakage relays up to 10A
- RCD tripping current (Ramp test)
- Measurement in AUTOMATIC sequence of Overall earth resistance, RCD test, Insulation (AUTOTEST)
- Phase sequence
- Measurement of percentage voltage drop on the lines
- Measurement with use of remote lead (with optional accessory PR400)
- Leakage current (with optional clamp HT96U)
- Measurement of electric parameters (V, I, W, VAR, VA, Wh, cosphi)
- Harmonic analysis V, I and THD%
- Help on line on the display
- Internal memory for measured data saving
- Optical/USB serial port for PC connection
- Integrated WiFi communication interface

## Main features

<b>Power supply:</b>	6x1.2V rechargeable batteries type AA NiMH or 6x1.5 type AA alkaline
<b>Battery life:</b>	> 550 test (alkaline)
<b>Display:</b>	Resistive touch screen, colour LCD, resolution 320x240 pxl
<b>Memory:</b>	999 locations, 3 levels of markers
<b>PC interface:</b>	optical/USB and WiFi
<b>Safety:</b>	IEC/EN61010-1, double insulation
<b>Operating humidity:</b>	<80%RH
<b>Operating temperature:</b>	0 ÷ 40°C
<b>Storage humidity:</b>	<80%RH
<b>Storage temperature:</b>	-10 ÷ 60°C
<b>Measurement category:</b>	CAT III 240V, max 415V between inputs
<b>Pollution level:</b>	2
<b>Reference standard:</b>	IEC/EN61557-1-2-3-4-5-6-7
<b>Size (LxWxH):</b>	225 x 165 x 75 mm
<b>Weight (batteries included):</b>	1.2 kg

## Included accessories

<b>C2033X</b>	Cable with 3-terminal Shuko plug
<b>UNIVERSALKITG3</b>	Set of 4 cables, 4 alligator clips, 3 leads
<b>KITERRNE</b>	Bag with 4 cables + 4 metal probes
<b>PR400</b>	Remote lead for test activation
<b>PT400</b>	Touch-screen pen
<b>VA507</b>	Rigid transport case for device + accessories
<b>YABAT0003000</b>	1.2V NiMH AA rechargeable battery, 6 pieces
<b>YABAT0004001</b>	Battery charger for 6 AA/AAA batteries
<b>TOPVIEW2006</b>	Management software + optical/USB C2006 cable
<b>ZEROLoop</b>	Accessory for zeroing the cable in Loop measurement
	Quick user guide
	User manual on CD-ROM
	ISO9000 calibration certificate

## Optional accessories

<b>HT96U</b>	AC clamp for leakage current, 1-100-1000A/1V, diameter 54mm
<b>HT4005K</b>	Clamp AC 200A/1V, diameter 40mm
<b>IMP57</b>	Accessory for measuring Loop impedance with high resolution
<b>T2100</b>	Clamp for measuring the resistance of earth rods
<b>SP-0400</b>	Set for slinging the instrument over one's shoulder
<b>606-IECN</b>	Adapter for leads with magnetic terminal
<b>1066-IECN</b>	Connector for cable extension banana 4mm
<b>RCDX10</b>	Accessory for industrial earth leakage relays up to 10A
<b>VA500</b>	Rigid transport case for device and accessories
<b>VA504</b>	Rigid carrying case for device and clamp T2100
<b>HT52/05</b>	Probe for measuring temperature/humidity
<b>HT53/05</b>	Probe for illuminance measurement



ORDER CODE HV000062

# COMBIG2

ADVANCED MULTIFUNCTION DEVICE FOR VERIFICATION OF ELECTRIC SAFETY OF DOMESTIC AND INDUSTRIAL ELECTRIC SYSTEMS (IEC/EN61557-1)

- **All verifications of electric safety** provided for by standards IEC/EN61557-1.
- **Advanced Loop** Verification of magnetothermal protections, fuses and cable sizes.
- **Measurement of electric parameters in single-phase** installations (V, I, W, VAR, VA, PF)
- **Test of RCDs** type A, AC, B up to 1A, and earth leakage relays with test current up to 10A (with optional accessory RCDX10).
- Measurement of **insulation resistance**.
- Measurement of **continuity** of protection conductors.
- Verification of **phase sequence (SEQ)** and **leakage currents**.
- **Measurement of environmental parameters** through external probes.

COMBIG2 is used for checking the safety of domestic and industrial electric systems (IEC/EN61557-1).

Thanks to its building characteristics, the type of setting and the multiple applications as regards the documentation it is capable of producing, this device can satisfy even the most demanding technician and the most rigorous verifier.

Its TFT colour display with **touch-screen** allows using this device in a completely new manner. **COMBIG2 makes available on its display all possible variables to obtain a perfect measurement**; your task will only be to "touch" what you really want to measure: then, simply leave the rest to COMBIG2's micro-processor!

The device complies with **all requirements as regards the safety of electric systems: test of RCDs type A, AC also up to 1000 mA and type B; insulation, continuity, earth resistance tests** directly on the power outlet without causing the RCDs' tripping.

With the appropriate programming guided by the touch-screen system, this device can test the **breaking capacity, tripping current, I2t relevant to magneto-thermal switches (MCB) with curves B, C, D, K and fuses type gG and aM!**

Combined with **optional clamp HT96U** it is capable to carry out and record **measurements of leakage current, power, cosphi, harmonics, THD% and frequency**. This device has been devised for use together with optional accessories which widen its operating fields: e.g. **HT53/05** for measuring lux, **HT52/05** for measuring temperature and humidity and **RCDX10** for testing earth leakage relays **up to 10A**.

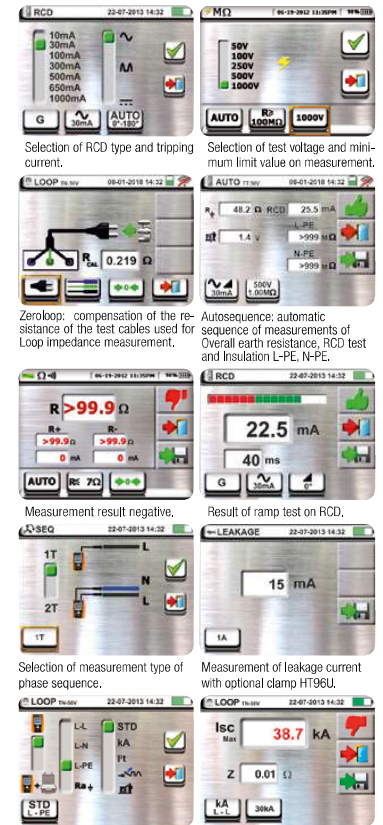
Cutting-edge management of measurement with indication, at the end of each safety test, of compliance or non-compliance with requirements with simple symbols **OK** or **NOT OK**. Finally, thanks to the brand new **HTAnalysis App, free to download for iOS and Android systems**, COMBIG2 is capable of transferring measured and recorded data onto tablets and smartphones, thus giving the operator the possibility to customize and share through **HTCloud** the result of their tests.



Power measurement, using the HTAnalysis™ App on tablet.



Measurement of leakage current with optional clamp HT96U.



Selection of RCD type and tripping current.

Selection of test voltage and minimum limit value on measurement.

Zero-loop: compensation of the resistance of the test cables used for Loop impedance measurement.

Autosequence: automatic sequence of measurements of Overall earth resistance, RCD test and Insulation L-PE, N-PE.

Measurement result negative.

Result of ramp test on RCD.

Selection of measurement type of phase sequence.

Measurement of leakage current with optional clamp HT96U.

General screen. Advanced Loop.

Negative result of breaking capacity test.

## Functions

- AUTO test (overall earth resistance test, RCD tests, insulation tests) on the outlets to be tested.
- Insulation with voltage 50, 100, 250, 500, 1000VDC
- Continuity of protective conductors with 200mA
- Non-trip earth resistance
- Line/Loop impedance, Phase-Phase, Phase-Neutral, Phase-PE
- Line/Loop impedance, Phase-Phase, Phase-Neutral, Phase-PE with high resolution (0.1 mΩ)
- ZEROLOOP function for a compensation of the resistance of the test cables used for Loop measurement.
- Prospective short-circuit current
- Contact voltage
- Tripping time of General, Selective and Delayed RCDs.
- Test current A, AC max 1A and type B max 300mA.
- Test on RCDs with separate clamp jaw up to 10A
- RCD tripping current (Ramp test)
- Measurement in AUTOMATIC sequence of Overall earth resistance, RCD test, Insulation (AUTOTEST)
- Phase sequence
- Measurement of percentage voltage drop on the lines
- Measurement with use of remote lead (with optional accessory PR400)
- Leakage current (with optional clamp HT96U)
- Measurement of electric parameters (V, I, W, VAR, VA, Wh, cosphi)
- Harmonic analysis V, I and THD%
- Help on line on the display
- Internal memory for measured data saving
- Optical/USB serial port for PC connection
- Integrated WiFi communication interface

## Main features

<b>Power supply:</b>	6x1.2V rechargeable batteries type AA NiMH or 6x1.5 type AA alkaline
<b>Battery life:</b>	> 550 test (alkaline)
<b>Display:</b>	Resistive touch screen, colour LCD, resolution 320x240 pxl
<b>Memory:</b>	999 locations, 3 levels of markers
<b>PC interface:</b>	Optical/USB and WiFi
<b>Safety:</b>	IEC/EN61010-1, double insulation
<b>Operating humidity:</b>	<80%RH
<b>Operating temperature:</b>	0 ÷ 40°C
<b>Storage humidity:</b>	<80%RH
<b>Storage temperature:</b>	-10 ÷ 60°C
<b>Measurement category:</b>	CAT III 240V, max 415V between inputs
<b>Pollution level:</b>	2
<b>Reference standard:</b>	IEC/EN61557-1-2-3-4-5-6-7
<b>Size (LxWxH):</b>	225x165x75mm
<b>Weight (batteries included):</b>	1,2 kg

## Included accessories

<b>C2033X</b>	Cable with 3-terminal Schuko plug
<b>UNIVERSALKITCOMBI</b>	Set of 3 cables, 3 alligator clips, 3 leads
<b>PT400</b>	Touch-screen pen
<b>VA507</b>	Rigid transport case for device + accessories
<b>TOPVIEW2006</b>	Management software + optical/USB C2006 cable
<b>ZEROLOOP</b>	Accessory for zeroing the cable in Loop measurement
	Quick user guide
	User manual on CD-ROM
	ISO9000 calibration certificate

## Optional accessories

<b>HT96U</b>	AC clamp for leakage current, 1-100-1000A/1V, diameter 54mm
<b>IMP57</b>	Accessory for measuring Loop impedance with high resolution
<b>SP-0400</b>	Set for slinging the instrument over one's shoulder
<b>606-IECN</b>	Adapter for leads with magnetic terminal
<b>1066-IECN</b>	Connector for cable extension banana 4mm
<b>RCDX10</b>	Accessory for industrial RCDs up to 10A
<b>YABAT0003000</b>	1.2V NiMH AA rechargeable battery, 6 pieces
<b>YABAT0004001</b>	Battery charger for 6 AA/AAA batteries
<b>PR400</b>	Remote lead for test activation
<b>VA500</b>	Rigid transport case for device and accessories
<b>HT52/05</b>	Probe for measuring temperature/humidity
<b>HT53/05</b>	Probe for illuminance measurement



ORDER CODE HV005037 | HV005038

# MACROTESTG1 MACROTESTG2

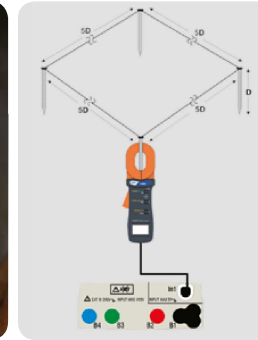
ADVANCED MULTIFUNCTION DEVICE FOR VERIFICATION OF ELECTRIC SAFETY OF DOMESTIC AND INDUSTRIAL ELECTRIC SYSTEMS (IEC/EN61557-1)

- ▶ **Earth resistance** by **voltammetric method** with 2 or 3 spots in TT, TN and IT systems, **overall earth resistance measurement** and with **clamp meter T2100** (optional).
- ▶ **Ground resistivity**.
- ▶ **Measurement of electric parameters in single-phase installations** (V, I, W, VAR, VA, PF)
- ▶ Measurement of **insulation resistance (Macrotest G2)**.
- ▶ Measurement of **continuity** of protective conductors.

MacrotestG2 and MacrotestG1 fully take advantage of the **touch-screen** technology developed for MacrotestG3 and, hence, of all its settings, but their application range is for measuring **insulation resistance** and **earth resistance by voltammetric method**, also with **optional clamp T2100** and, finally, for **continuity measurement** of protective conductors. Cutting-edge management of measurement with indication, at the end of each safety test, of compliance or non-compliance with requirements with simple symbols **OK** or **NOT OK**.



Measurement of earth resistance with Clamp T2100.



Example of measurement diagram with T2100.



Use on tablets through the HTAnalysis™ App.



Measurement of earth impedance by voltammetric method.



Start/stop measuring with remote lead PR400.



Measurement result negative.

Selection of test voltage and minimum limit value on measurement.



Power measurement.

Power measurement: harmonics.



Selection of earth measurement type.

Earth resistance measurement result OK.

## Functions

- Insulation with voltage 50, 100, 250, 500, 1000VDC (**Macrotest G2**)
- Continuity of protective conductors with 200mA
- Earth resistance by voltammetric method
- Earth resistance with stakeless testing method
- Ground resistivity by 4-wire method
- Measurement with use of remote lead (with optional accessory PR400)
- Measurement of electric parameters (V, I, W, VAR, VA, Wh, cosphi)
- Harmonic analysis V, I and THD%
- Help on line on the display
- Internal memory for measured data saving
- Optical/USB serial port for PC connection
- Integrated WiFi communication interface

## Main features

<b>Power supply:</b>	6x1.2V rechargeable batteries type AA NIMH or 6x1.5 type AA alkaline > 550 test (alkaline)
<b>Battery life:</b>	
<b>Display:</b>	Resistive touch screen, colour LCD, resolution 320x240 pxl 999 locations, 3 levels of markers
<b>Memory:</b>	optical/USB and WiFi
<b>PC interface:</b>	optical/USB and WiFi
<b>Safety:</b>	IEC/EN61010-1, double insulation
<b>Operating humidity:</b>	<80%RH
<b>Operating temperature:</b>	0 ÷ 40°C
<b>Storage humidity:</b>	<80%RH
<b>Storage temperature:</b>	-10 ÷ 60°C
<b>Measurement category:</b>	CAT III 240V, max 415V between inputs
<b>Pollution level:</b>	2
<b>Reference standard:</b>	IEC/EN61557-1-2-4-5
<b>Size (LxWxH):</b>	225x165x75 mm
<b>Weight (batteries included):</b>	1.2 kg

## Included accessories

<b>UNIVERSALKITG3</b>	Set of 4 cables, 4 alligator clips, 3 leads
<b>KITTERRNE</b>	Bag with 4 cables + 4 metal probes
<b>PT400</b>	Touch-screen pen
<b>VA507</b>	Rigid transport case for device + accessories
<b>YABAT0003000</b>	1.2V NIMH AA rechargeable battery, 6 pieces
<b>YABAT0004001</b>	Battery charger for 6 AA/AAA batteries
<b>TOPVIEW2006</b>	Management software + optical/USB C2006 cable
	Quick user guide and User manual on CD-ROM
	ISO9000 calibration certificate

## Optional accessories

<b>T2100</b>	Clamp for measuring the resistance of earth probes
<b>SP-0400</b>	Set for slinging the instrument over one's shoulder
<b>606-IECN</b>	Adapter for leads with magnetic terminal
<b>1066-IECN</b>	Connector for cable extension banana 4mm
<b>PR400</b>	Remote lead for test activation
<b>HT4005K</b>	Clamp AC 200A/1V, diameter 40mm
<b>VA500</b>	Rigid transport case for device + accessories
<b>VA504</b>	Rigid transport case for device with accessories + clamp T2100



YouTube



ORDER CODE HV000420 | HV004210

# COMBI420|421

MULTIFUNCTION DEVICES  
FOR TESTS ON DOMESTIC AND INDUSTRIAL SYSTEMS  
WITH MAINS ANALYSIS

COMBI420 and COMBI421 carry out tests of electric systems in compliance with IEC/EN61557-1 and therefore measurements of overall earth resistance, tests on RCDs type A and AC up to a rated current of 1A, Insulation, Continuity and short-circuit currents. They also allow measuring and saving environmental parameters (illumination, temperature), leakage current and the electric quantities active power, harmonics, power factor on single-phase systems and, last but not least, they offer the possibility of checking phase sequence only using one lead. The internal memory allows saving the measurements carried out in order to subsequently transfer them onto the PC through the serial connection.

The instruments are provided with the innovative **AUTO** function: by selecting this function and only setting the value of RCD current, the models, connected to a power outlet, carry out tests of overall earth resistance, on RCDs and insulation tests in a sequence. At the end of the test, the devices show all results with the indication of compliance or non-compliance with the standards with simple symbols **OK** or **NOT OK**.



TRMS

YouTube



ORDER CODE HV000075 | HV000074

# M75|M74

DEVICES FOR SAFETY TESTS WITH TRMS MULTIMETER FUNCTIONS AND RJ-45 WIRE MAPPING (ONLY M75)

M75 is the mobile device par excellence!

HT suggests operators who mainly work on domestic installations to **ALWAYS** have M75 at hand. Here's the reason why: it is very easy to use, very small in size and it **fully automatically** carries out all necessary tests to establish **COMPLIANCE** (and hence ensure **SAFETY**) of a domestic electric system.

**ALWAYS** using it before starting working on an already existing system the operator does not know well and **ALWAYS** using it at the end of the job will guarantee the necessary safety to both operators and users of the electric systems!

Thanks to its **small size**, this device offers many operating opportunities. M75 is used for testing the safety of electric systems, so for measuring overall earth resistance, testing RCDs type A and AC, insulation and continuity.

In order to make it versatile and fully functional for any kind of end user, the device has been provided with the innovative **AUTO** function: by selecting this function and only setting the value of RCD current, M75, connected to a power outlet, carries out tests of overall earth resistance, RCD tests and insulation tests in a sequence. At the end of the test, the device shows all results with the indication of compliance or non-compliance with the standards with simple symbols **OK** or **NOT OK**.

This innovative product also offers the following functions: TRMS multimeter for AC/DC voltage, AC/DC current (with external clamp), resistance measurement, wire mapping test on LAN cables (M75 only), test of phase sequence with a single lead.

## Functions and characteristics

- Continuity of protective conductors with 200mA
- Insulation with 50, 100, 250, 500, 1000VDC
- Tripping time of type A, AC general and Selective RCDs up to 1A
- Tripping current of type A, AC general up to 650mA
- Loop/Line impedance P-N, P-P, P-PE also with high resolution (0,1mΩ) with optional accessory IMP57
- Non-trip earth resistance
- Contact voltage
- Phase sequence
- AUTO test (non-trip earth resistance, RCD and insulation test) on the outlets to be tested
- Power and cosphi measurements in single-phase systems
- Voltage and current harmonics up to the 49<sup>th</sup> with THD%
- Measurement of environmental parameters (temperature, humidity, illumination) with optional probes
- Measurement of leakage currents (with optional clamp HT96U)
- Activation of measurements with optional remote lead PR400
- Context help on the display
- Storage of results
- Optical/USB interface for PC connection
- Safety: IEC/EN61010-1, IEC/EN61557-1-2-3-4-6-7
- Measurement category: CATIII 240V (to earth), max 415V between inputs
- Power supply: 6x1.5V batteries type AA, LR6, AM3, MN 1500
- Size (LxWxH): 235x165x75mm
- Weight (batteries included): 1.2 kg

## Included accessories

UNIVERSALKITCOMBI	Set of 3 cables + 3 alligator clips + 3 leads
C2033X	3-terminal cable with Schuko plug
BORSA75	Soft carrying bag
	User manual on CD-ROM and Quick guide for use
	ISO9000 calibration certificate

## Optional accessories

TOPVIEW2006	Windows software for PC + optical/USB cable
IMP57	Accessory for measuring Loop impedance with high resolution (0,1mΩ)
HT4005K	Standard AC 200A/1V clamp, diameter 40mm
HT4005N	Standard AC 5-100A/1V clamp, diameter 20mm
HT96U	AC clamp for leakage current, 1-100-1000A/1V, diameter 54mm
SP-0400	Set for slinging the instrument over one's shoulder
PR400	Remote lead for test activation
VA500	Rigid transport case for device and accessories
HT52/05	Probe for measuring temperature/humidity
HT53/05	Probe for illumination measurement

## Functions and characteristics

- Continuity of protective conductors with 200mA
- Insulation with 250,500VDC
- Tripping time on General RCDs type AC (up to 300mA) and type A (30mA)
- Tripping current on General RCDs type AC and A (30mA)
- Non-trip earth resistance
- AUTO function (non-trip earth resistance test, RCD tests, insulation tests)
- Phase sequence with 1 and 2 terminals
- Wire mapping of RJ-45 LAN cables (**only M75**)
- DC/AC TRMS voltage
- DC/AC TRMS current
- Resistance and Continuity test
- Data HOLD, MAX/MIN/AVG
- Measurement of voltage and current PEAK
- Measurement of leakage currents (with optional clamp HT96U)
- Safety: IEC/EN61010-1
- Measurement category: CATIII 550V
- Power supply with AA batteries 4x1.5V
- Size (LxWxH): 240x100x45 mm
- Weight (batteries included): approx. 450 g

## Included accessories

KIT0075	Set of 2 cables with leads + 2 alligator clips
C2075	2-terminal cable with Schuko plug
HT4003	Standard 400A/1V clamp ( <b>only M75</b> )
CH1	Remote unit #1 ( <b>only M75</b> )
CH2	Remote unit #2 ( <b>only M75</b> )
YAAMS0000000	(3x) RJ45 patch cable ( <b>only M75</b> )
BORSA75	Soft carrying bag
	User manual on CD-ROM, calibration certificate ISO9000 and Quick user guide

## Optional accessories

HT96U	Standard 1-100-1000A/1V clamp, diameter 54 mm
HT4005K	Standard 5-100A AC/IV clamp
HT4004N	Standard 10-100A DC/IV clamp
NOCANBA	Adapter for connecting HT96U, HT4004, HT4005N
REM 3,4,5,6,7,8	Single remote unit, choose between no. 3, 4, 5, 6, 7, 8. ( <b>only M75</b> )
REM38	Kit of 6 remote units (no. 3, 4, 5, 6, 7, 8) ( <b>only M75</b> )



ORDER CODE **HV000003**

# FULLTEST3

MULTIFUNCTION DEVICE FOR SAFETY TESTS ON SWITCHBOARDS AND MACHINES ACCORDING TO IEC/EN60204-1:2006 AND IEC/EN61439-1

- **Verification of dielectric strength** with test voltage up to 5100V in compliance with the prescriptions of new standard IEC/EN61439-1
- **Verification of protection against indirect contact** in compliance with the prescriptions of standard IEC/EN 60204-1:2006
  - **Continuity of protective conductors** (test current 200mA ÷ 25A)
  - **Verification of RCD tripping** (RCD AC, A, B) up to 1A
  - **Measurement of Non-trip earth resistance**
  - **Verification of coordination of magneto-thermal protections** (MCB curves B, C, D, K) and fuses (gG, aM)
- **Insulation resistance** with test voltage up to 1000V
- **Verification of residual voltage** on capacitive elements
- **Measurement of leakage current** through the outlet and through optional clamp (HT96U)
- **Functional test** through outlet (power, current)
- **Phase sequence.**

HT offers a cutting-edge device to carry out all measurements required by the new laws as regards tests to be performed on electric switchboards and machines IEC/EN60204-1:2006 and IEC/EN61439-1.

Further to measurements of **protective conductors' continuity, insulation and dielectric strength**, FULLTEST3 is capable of carrying out **tests on RCDs type A, AC and B, General, Selective and Delayed**, measurements of **Line/Loop impedance** also with high resolution **0.1mΩ** (with optional accessory IMP57), **measurement of non-trip earth resistance and leakage current with clamp transducer**. It can also carry out test on **breaking capacity, protection tripping, I2t tests relevant to magneto-thermal circuit breakers in curve B, C, D, K and fuses type gG and aM**. The device is also provided with a "touch-screen" colour display and 3 USB ports for connection to PC, USB pen drive, USB printers and possible bar code readers.



FULLTEST at work



## Functions

- Continuity of protective conductors with 200mA
- Continuity of protective conductors with I>10A, V<12V
- Continuity of protective conductors with I>25A, V<12V
- Insulation with test voltages 100, 250, 500, 1000VDC
- Dielectric withstand with voltage programmable from 250V to 5100VAC
- Discharge time/residual voltage on plugs and internal circuits
- Absorbed/leaked current and power at plug of machines
- Tripping time/current of type A, AC, B General and Selective RCDs up to 1000mA
- Contact voltage
- Line/Loop impedance and Ipsc calculation
- Line/Loop impedance with high resolution (with optional accessory IMP57)
- Non-trip earth resistance
- Leakage current (with optional accessory HT96U)
- Phase sequence
- Timer and limit thresholds selectable through programmable ramps

## Main features

<b>Power supply:</b>	207V ÷ 253V / 50-60Hz
<b>Protection:</b>	with fuses, at input
<b>Display:</b>	LCD colour "touch-screen" display
<b>Memory:</b>	internal, 999 locations
<b>PC interface:</b>	USB (PC, pen drive, printers, etc.) and Bluetooth™
<b>Mechanical protection:</b>	IP40
<b>Pollution level:</b>	2
<b>Safety:</b>	IEC/EN61010-1
<b>Considered standards:</b>	IEC/EN61557-1-2-3-4-13-14 IEC/EN60204-1:2006 IEC/EN61439-1 IEC/EN60335-1 EN50106
<b>Measurement category:</b>	CAT III 300V (safety test) CAT III 300V (functional test)
<b>Size (LxWxH):</b>	400x300x170mm
<b>Weight:</b>	15 kg

## Included accessories

	Integrated power supply cable
2317-IECIV-200-R	Test cable 2.5mm <sup>2</sup> , 2m, red, 2 pieces
2310-IECIV-200-B	Test cable 0.75mm <sup>2</sup> , 2m, blue
2310-IECIV-200-V	Test cable 0.75mm <sup>2</sup> , 2m, green
2310-IECIV-200-N	Test cable 0.75mm <sup>2</sup> , 2m, black, 2 pieces
C2033X	Cable with 3-terminal Shuko plug
FT3HVPRB1	1 cable banana-alligator clip + 1 cable banana-lead 2m HV
404-IECN	Measuring lead CAT III, 3 pieces
5004-IECN	Alligator clip, 4 pieces
TOPVIEW2007	Windows software + USB cable
FT3BRSN	Soft carrying bag for accessories.
	ISO9000 calibration certificate
	User Manual
	Quick user guide
	User manual on CD-ROM

## Optional accessories

IMP57	Accessory for measuring Loop impedance with high resolution
HT96U	Clamp for measuring leakage currents
FT3HVTIP	Cable banana-lead, black HV
FT3KB DEN	USB keyboard
FT3R-GLP*	Red/green control lamp for ongoing test with 7m cable
FT3RMTCT	Remote start/stop/save button with cable length 7 m.
FT3SFTSW	Open door detection device for verification room
FT3MPT2	Thermal printer with 32 columns
FT3BARCR	Bar code reader with USB port
FT3BLACKBOX	Device for functional verification of FULLTEST3
C2009AD	Cable with adapter for connection to IMP57
FT3REDLP**	Red control lamp for ongoing test with 7m cable

(\* ) For devices with HW version 70 or higher and N/S equal or higher than 16101107. (\*\* ) For devices with HW version lower than 70.