GENERAL CATALOGUE 2019/2020

Download the catalogue on your devices

Just scan the **QR Code** below and download the **catalogue** for your smartphone or tablet!

We are designing the future. **Right now.**

Thanks to the experience acquired in over thirty years of presence on the market, HT has established in Italy as a leading company in the field of electric devices. HT designs and develops a wide and reliable range of devices for checking electric safety, for power quality and energy consumption analysis and for checking, testing and maintaining photovoltaic systems.

Continuously staying up to date and keeping up with the latest developing technology, the Company has always offered to the Customers cutting-edge products, carefully studied under every aspect as regards safety, quality of the materials, modern design and ease of use.

From the sector of electric safety checking, HT has extended its expertise to the photovoltaic field as well, following a path of continuous evolution which combines a proven technology with innovation and care for every detail. Its wide range of products makes up a comprehensive offer for those who want to be sure they work in full compliance with the laws, in total safety and with cutting-edge technology.

The culture of research and innovation, together with the utmost attention to safety and the products' reliability are the pillars of the corporate philosophy of HT.

The primary target is the attention to the Customer: that's the main reason why the Company decided, in 1998, to achieve quality certification according to UNI EN ISO 9001.

This certification has further enhanced the quality of the production processes of products and services: as required by the laws in force, all HT products are provided with the CE mark. Anyway, for a better protection of Customers, certification is only granted after tests are carried out by prominent and specific inspection authorities, which are totally independent from the company to be evaluated.

Electric safety as a basic requirement of high-quality devices

Further to carrying out their function, devices for electric measurement must focus on the **operator's safety** as a basic requirement as regards **protection from instant overvoltage** which may generate because of the presence of **complex charging networks, short circuits, atmospheric charges, etc**...
In this respect, international standard **IEC 61010-1** harmonized in Europe with **EN 61010-1** has devised precise rules which electric devices used for measurements in LV (<1000VAC) must comply with. Four **"Overvoltage Categories"** were created, which define the protection level against voltage spikes of each device according to the distance from the power supply source. Devices in the highest category need a higher internal protection as they can operate near the power supply source. A short description is outlined below:

OVERVOLTAGE CATEGORY:

CAT I	CAT II	CAT III	CAT IV
TYPE OF MEASUREMENT Measurements carried out on circuits not directly connected to the distribution power	***TYPE OF MEASUREMENT*** Measurements carried out on circuits directly connected to the low-voltage installation	***TYPE OF MEASUREMENT*** Measurements carried out in the building installation	***TYPE OF MEASUREMENT*** Measurements carried out at the source of the low-voltage installation
APPLICATION Protected electronic devices, measurements on circuits not derived from power	***APPLICATION*** Household devices, mobile devices and similar	***APPLICATION*** Distribution boards, wirings, switches, sockets in fixed installations, electric motors, industrial devices	***APPLICATION*** Electricity meters, measurements on primary overcurrent protection devices, ripple control units

Why using TRMS devices

In modern domestic and industrial installations, the use of so-called "**non-linear loads**" (e.g. computer networks, variable speed devices, switching suppliers, etc...) is increasing. These loads contribute to the **sometimes remarkable deformation of the waveform of the signals applied to it,** taking it further and further from the traditional sinusoidal waveform typical of "linear" loads (consisting in resistors, inductance or capacitance). Normal measuring devices (multimeters and clamp meters) for measuring alternating voltage and current of "**average-value**" type allow precise measurements **only on sinusoidal waveforms of signals, hence on linear loads**.
To measure non-linear loads, the generation of **harmonic components** which cause the **distortion of the waveform** of the signal, makes the use of **TRMS (True Root Mean Square) devices** necessary, since the average-value devices, taking only the value of fundamental frequency of 50Hz into consideration, may bring to **even remarkable mistakes** of the value reading.
Further to the TRMS value o the fundamental frequency, **TRMS** devices also provide the **TRMS value of the whole waveform, including harmonic components,** within the bandwidth they are designed for. Therefore, when measuring the same quantity with devices of both types, the obtained values will be identical only if the waveform of the signal is purely sinusoidal. In case of distorted waveforms, instead, **TRMS devices** always provide higher values than those measured by corresponding average-value devices.
Therefore, the use of **TRMS** measuring device is essential when carrying out measuring and maintenance operations on industrial electric systems in order to obtain **reliable reading values** of the measured quantities.

ALPHABETICAL INDEX

COMBI 421 • COMBI 420	50	HT60	86	M75 • M74	51
COMBIG2	46	HT61 • HT62 • HT63 • HT64	86	MACROTESTG1	48
DM40	165	HT7	100	MACROTESTG2	48
F3000	111	HT70	131	MACROTESTG3	44
FLASHMETER	90	HT7004 • HT7005	113	MERCURY	89
FULLTEST3	52	HT701	92	MPP300	24
GEO416	56	HT7051	65	NEPTUNE	88
GSC60	42	HT7052	64	PQA819 • PQA820	30
HT10	100	HT712	94	PQA823 • PQA824	28
HT100	112	HT77N • HT78	120	PVCHECKs	22
HT12	98	HT79	120	QUICKLAN6050N	137
HT14D	99	HT8	100	QUICKLAN6055	136
HT155 • HT157	160	HT8051	78	SOLAR I-Ve	18
HT204	157	HT8100	79	SOLAR300N	20
HT2055	60	HT82	130	SPEED418	74
HT20S	131	HT9012	108	T2000 • T2100	58
HT21 • HT211	96	HT9014	107	THT32	144
HT2234N	125	HT9015	115	THT33	145
HT25N	96	HT9019	106	THT45w • THT46	143
HT309	156	HT9020	117	THT60	142
HT3300	152	HT9021	114	THT70	142
HT3302	151	HTA102	161	VEGA78	28
HT3305	152	HTA103 • 105 • 106 • 107	148	XL421	36
HT3320	150	HTANALYSIS™ • HTCLOUD™	38	XL422	36
HT38	132	I-V400w • I-V500w	18	XL423	37
HT39	91	iDM70	164	XL424	37
HT401	93	IRONMETER	90		
HT4010	110	ISO410	67		
HT4011	109	JUPITER	72		
HT4013	116	LINESPLITTER	128		
HT4020 • HT4022	118	M70	69		
HT5	133	M71	57		
HT5000	124	M72	68		
HT6	100	M73	73		

GENERAL INDEX OF THE DEVICES

DEVICES FOR PHOTOVOLTAIC FIELDS

I-V500w • I-V400w • SOLAR I-Ve	Pag. 18
SOLAR300N	Pag. 20
PVCHECKs	Pag. 22
MPP300	Pag. 24

POWER QUALITY ANALYZERS

PQA824 • PQA823 • VEGA78	Pag. 28
PQA820 • PQA819	Pag. 30

DATA LOGGERS

XL421 • XL422	Pag. 36
XL423 • XL424	Pag. 37
HTANALYSIS™ & HTCLOUD™	Pag. 38

ELECTRICAL INSTALLATION SAFETY TESTERS

GSC60	Pag. 42
MACROTESTG3	Pag. 44
COMBIG2	Pag. 46
MACROTESTG2 • MACROTESTG1	Pag. 48
COMBI 421 • COMBI 420	Pag. 50
M75 • M74	Pag. 51
FULLTEST3	Pag. 52

EARTH RESISTANCE AND STEP/CONTACT VOLTAGE MEASURING DEVICES

GEO416	Pag. 56
M71	Pag. 57
T2000 • T2100	Pag. 58
HT2055	Pag. 60

INSULATION AND CONTINUITY MEASURING DEVICES

HT7052	Pag. 64
HT7051	Pag. 65
NEPTUNE	Pag. 66
ISO410	Pag. 67
M72	Pag. 68
M70	Pag. 69

RCD AND LOOP VERIFICATION DEVICES

JUPITER	Pag. 72
SPEED418	Pag. 74
M73	Pag. 75

PROCESS CALIBRATORS

HT8051	Pag. 78
HT8100	Pag. 79

PROFESSIONAL TRMS MULTIMETERS

HT64 • HT63 • HT62 • HT61 • HT60	Pag. 86
JUPITER • NEPTUNE	Pag. 88
MERCURY	Pag. 89
IRONMETER • FLASHMETER	Pag. 90
HT39	Pag. 91
HT701	Pag. 92
HT401	Pag. 93
HT712	Pag. 94

DIGITAL MULTIMETERS

HT211 • HT21 • HT25N	Pag. 96
HT12	Pag. 98
HT14D	Pag. 99
HT10 • HT8 • HT7 • HT6	Pag. 100

CLAMP METERS

HT9019	Pag. 106
HT9014	Pag. 107
HT9012	Pag. 108
HT4011	Pag. 109
HT4010	Pag. 110
F3000	Pag. 111
HT100	Pag. 112
HT7004 • HT7005	Pag. 113
HT9021	Pag. 114
HT9015	Pag. 115
HT4013	Pag. 116
HT9020	Pag. 117
HT4022 • HT4020	Pag. 118
HT79 • HT78 • HT77N	Pag. 120

BURIED CABLE LOCALIZER AND REVOLUTION COUNTER

HT-5000	Pag. 124
HT2234N	Pag. 125

PHASE DETECTORS, SWITCH DETECTORS AND PHASE SEQUENCE INDICATORS

LINESPLITTER	Pag. 128
HT82	Pag. 130
HT70 • HT20S	Pag. 131
HT38	Pag. 132
HT5	Pag. 133

DEVICES FOR LAN NETWORK VERIFICATION

QUICKLAN6055	Pag. 136
QUICKLAN6050N	Pag. 137

INFRARED THERMAL CAMERAS

THT70 • THT60	Pag. 142
THT46 • THT45w	Pag. 143
THT32	Pag. 144
THT33	Pag. 145

THERMOMETERS AND THERMO-ANEMOMETERS

HTA107 • HTA106 • HTA105 • HTA103	Pag. 148
HT3320	Pag. 150
HT3302	Pag. 151
HT3305 • HT3300	Pag. 152

LIGHT METERS AND SOLAR METERS

HT309	Pag. 156
HT204	Pag. 157

SOUND LEVEL METERS

HT157 • HT155	Pag. 160
HTA102	Pag. 161

LASER METERS

iDM70	Pag. 164
DM40	Pag. 165

HTAnalysis™

HTANALYSIS.
I-V curve and much more.

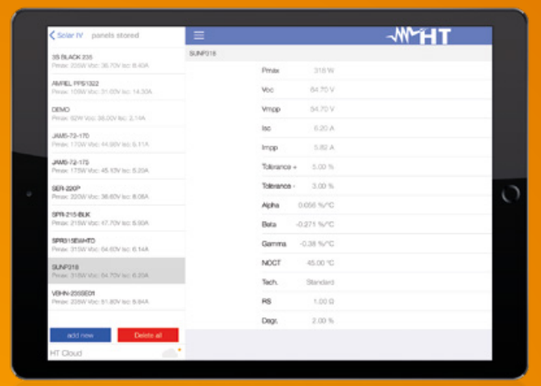
Download free
App **HTANALYSIS™**
for iOS and Android devices

Available on the App Store

Available on the Google play

The I-V curve is just the beginning.

With your mobile device **HTANALYSIS™** it will help you understand the nature of the problems occurring in photovoltaic installations.



Modules' database, you'll have more than 30.000.

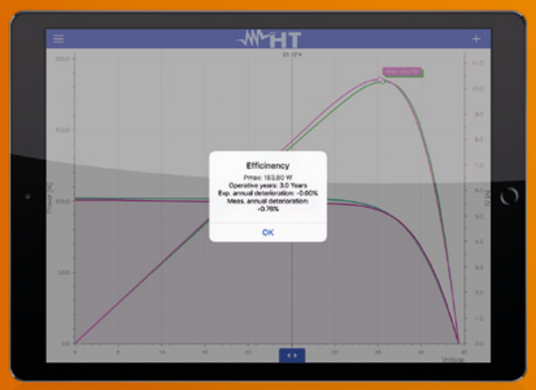
Organize the modules in the your device's memory. **You can add new ones**, **delete old ones** or simply **see the saved ones in your device**.

Data analysis. OK or NOT OK?

Start the analysis by selecting the I-V curve just downloaded. Once you have finished the analysis, please remember to complete measurement by attaching a **picture**, **a voice note**, **a text note** and a **video**.
Ah, yes. IT takes just a minute and you've already finished.

Your personal assistant.

HTANALYSIS™ is the only app with **Interactive Solution Center**. According to the nature of the I-V curve measured in the **Interactive Solution Center**, once you have selected the **I-V curve most similar to the one obtained through your measurement**, **you'll have a series of indications** on the possible problems and **possible solutions**.



Cell deterioration. What's the truth? Function Jump™

Insert the production date of the photovoltaic modules to be tested and the app will indicate the real deterioration compared to the one declared by the manufacturer.

HT Cloud™ Share. When, How and Where you want.

Download HTANALYSIS™ and use HTCloud™ as a personal database and **share your measurements** with your colleagues at any time and in **any place in the world**.
Ah, yes: **if you upload your measurements onto HTCLOUD™, you'll find them immediately in the TOPVIEW software on your PC**.

HTAnalysis™

HTANALYSIS.
Mains analysis.

Download free
App **HTANALYSIS™**
for iOS and Android devices

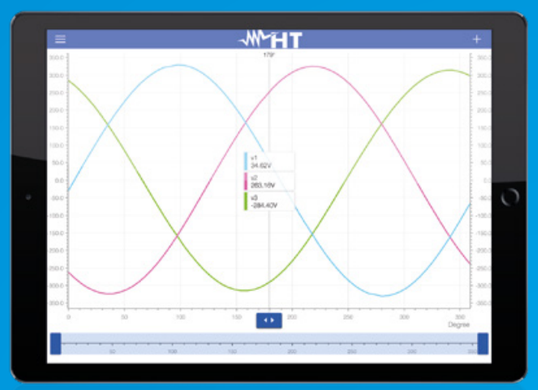
Available on the App Store

Available on the Google play

In real time #1

ALL values you need to know, immediately.

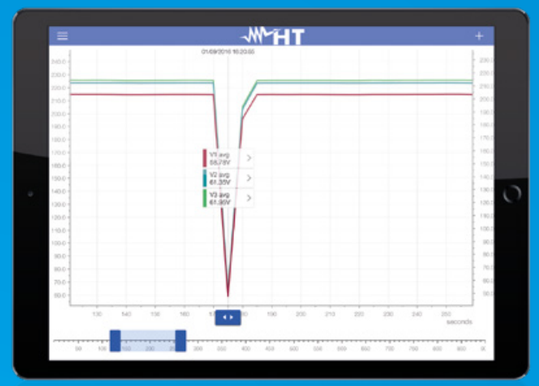
- Voltage and current
- Power (kW - kVA - kVAR)
- THD% on voltage and current
- Power Factor and dPF (Cosphi)



In real time #2

Waveforms

- Voltage **waveform**
- Current **waveform**
- Indication of the **phase angle**

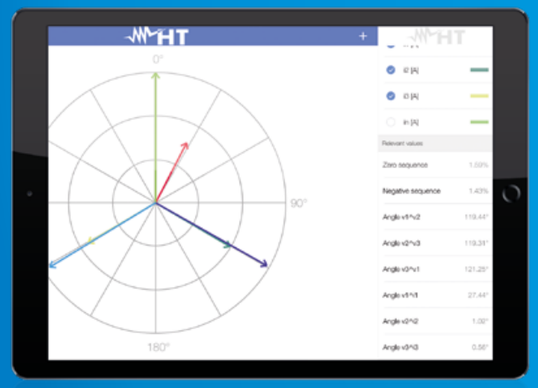


Mains analysis #1

Enough with reading numbers. Now you can also see them. **Download your recordings and analyze them directly on site**. **HTANALYSIS™** makes it possible **to immediately analyze all recorded quantities** in a few steps.

Mains analysis #2

Voltage anomalies, **Dips**, **Peaks and Interruptions**. Immediately discover **the nature of voltage anomalies** with their relevant **value** and its **duration**.



In real time #3

Vector diagram

- Voltage and current diagram
- Negative and zero sequence
- **Graphic** and **table indications**

In real time #4

Harmonics.

- Voltage and current harmonics
- Immediate display of values through cursor

Mains analysis #3

Power and Energy combined with time. Select "Power" from the interactive menu on the right and move the cursor onto the date and time you are interested in. Now touch the arrow in the middle of the cursor and you'll immediately display **the energetic consumption according to time**. **All in less than 10 seconds**.

HT Cloud™

Share. When, how and where you like.
Download HTANALYSIS™ and use HTCloud™ as a personal database and **share your measurements** with your colleagues at any time and in **any place in the world**. **Ah yes**, **if you upload the measurements onto HTCLOUD™, you'll find them immediately in the TOPVIEW software on your PC**.

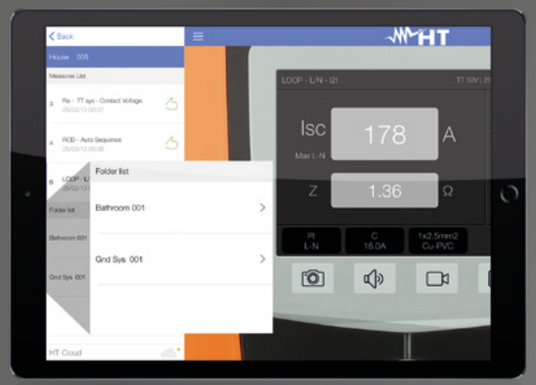
HTAnalysis™

HTANALYSIS.
Electric safety.

Download free
App **HTANALYSIS™**
for iOS and Android devices

Available on the App Store

Available on the Google play



Everything always well organized.

Waste no more time writing down information and values of your measurements on paper.
Thanks to HTANALYSIS™, the structure of saved measurements shall be similar to this one:

- First level folder (Home, Industry)
- Second level folder (Switchboard, Bedroom)
- Third level folder (Socket, Switch, RCD, MCB)

Multimedia contents on every measurement. Always.

Each measurement can be completed **with an attachment**, such as **pictures**, **videos**, **voice notes** or **text notes**. Please remember thst **all of these attachments will be automatically available** on **TOPVIEW** (PC software) through **HT Cloud**.

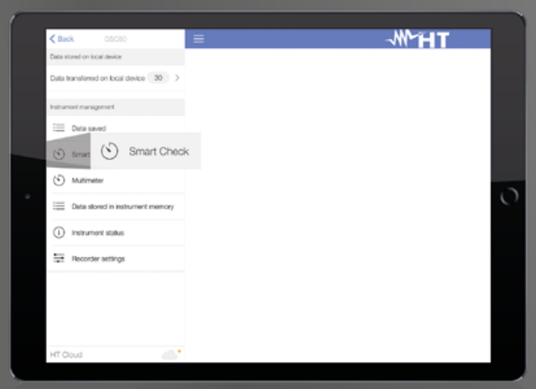
List of measurements with their result.

Every time you download a measuring campaign onto your tablet, you will get:

- Result of measurement OK or NOT OK
- Type of measurement carried out
- Date and time of measurement

No more need for paper notepads.

Adding a text note to every measurement means that **it is not necessary to use paper notepads any more**, which would force you to copy again in the PC software all notes made while preparing the report.



Function Smart Check™

Without downloading all measurements, it is possible **to attach to the last measurement** carried out **a picture**, **a video**, **a voice note** or **a text note**.

HT Cloud™ Share. When, How and Where you want.

Download HTANALYSIS™ and use HTCloud™ as a personal database and **share your measurements** with your colleagues at any time and in **any place in the world**.
Ah, yes: **if you upload your measurements onto HTCLOUD™, you'll find them immediately in the software TOPVIEW on your PC**.

PHOTOVOLTAIC TESTERS

VERIFICATION PHOTOVOLTAIC FIELD

PERFECTION FOR THE SUN

New HT solutions for performance optimization and troubleshooting.

Thanks to the decrease in the cost of components and the remarkable increase of performance, installing photovoltaic systems on the roof or on the ground has become increasingly common. In a photovoltaic system, problems connected to safety and to the system's performance must be checked, and maintenance of strings and single panels must be carried out.

Troubleshooting

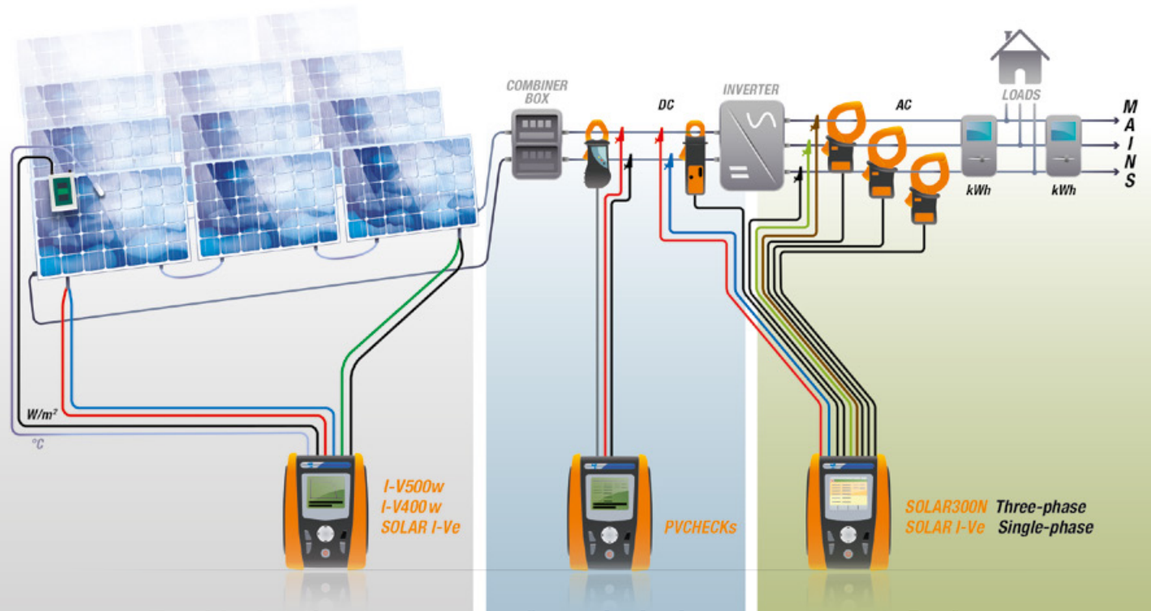
› It may happen that, during the operation of a system, **some modules may jeopardize the performance** of the whole system. When system efficiency is lower than expected, it is necessary **to detect the defective modules** so that they can be replaced. This is obtained by measuring the I-V curve with devices **I-V400w** (for DC voltage up to 1000V) **SOLAR I-Ve** and **I-V500w** (for DC voltage up to 1500V).

Commissioning Tests

› When **operating** a photovoltaic system, it is necessary to **certify its safety according to IEC62446**. The suitable device to carry out these verifications is **PVCHECKs**.

Performance

› Performance **Recording** is one of the **necessary requirements** to make **maintenance programs efficient**. By monitoring system performance it is possible to **certify** a **production loss** quickly and efficiently. **SOLAR300N**, **SOLAR I-Ve** and **MPP300** are the **ideal solution** for **recording over time the production of a system** and the **performance check of an inverter**.



PHOTOVOLTAIC TESTERS

MAINTENANCE AND EFFICIENCY OF THE PHOTOVOLTAIC SYSTEM	I-V500w	I-V400w	SOLAR I-Ve	SOLAR300N	PVCHECKs	MPP300
	MAINTENANCE		MAINTENANCE AND EFFICIENCY			
Measurement of I-V curve on PV modules and strings	•	•	•	-	-	-
Automatic measurement with AutoSequence™* mode	•	•	•	-	-	-
Quick IVCK test for measuring Voc and Isc on PV modules and strings	•	•	•	-	•	-
Single-phase/three-phase photvoltaic systems' testing	-	-	• 1MPPT (3MPPT with MPP300)	• 1MPPT (3MPPT with MPP300)	-	•
Continuity of protective conductors with 200mA	-	-	-	-	•	-
PV strings/field insulation with no service interruption with test voltage 250, 500, 1000V DC	-	-	-	-	•	-
DC side efficiency of the photovoltaic field	-	-	-	•	•	-
Use of remote unit SOLAR-02 with USB \ RF connection	• RF	• RF	• RF	• USB	• RF	• RF • USB
Measurement of irradiation with reference cell	•	•	•	•	•	-
Temperature measurement of cell and environment	•	•	•	•	•	-
MAINS ANALYSIS						
AC/DC voltage in single-phase/three-phase systems	-	-	-	•	• DC	•
AC/DC current in single-phase/three-phase systems	-	-	-	•	• DC	•
Cosphi, Power Factor	-	-	-	•	-	-
Voltage unbalance (NEG%, ZERO%)	-	-	-	•	-	-
Active P, Reactive Q, Apparent S Power/Energy	-	-	• Only active P	•	• Only active P	-
Voltage and current harmonics up to the 49th with calculation of THD%	-	-	-	•	-	-
Voltage anomalies (dips, peaks) with a resolution of 10ms (@ 50Hz)	-	-	-	•	-	-
Voltage spikes with a resolution of 5µs (200kHz)	-	-	-	•	-	-
Electric motor starting current (INRUSH)	-	-	-	•	-	-
Voltage flickers (Pst, Plt)	-	-	-	•	-	-
Full analysis EN50160	-	-	-	•	-	-
Phase sequence	-	-	-	•	-	-
Neutral-Ground Voltage	-	-	-	•	-	-
Neutral current	-	-	-	•	-	-
MEMORY AND RECORDING						
Max number of simultaneously selectable parameters	-	-	9	251	5	-
Recording with selectable integration period	-	-	5s-60m	1s-60m	5s-60m	1s-60m
Indicative memory duration (in days @ PI=10min @ max number of parameters)	-	-	8	90	-	8

››› FOLLOWS

	I-V500w	I-V400w	SOLAR I-Ve	SOLAR300N	PVCHECKs	MPP300
	MAINTENANCE		MAINTENANCE AND EFFICIENCY			
Internal memory extension with Compact Flash card	-	-	-	•	-	-
Default and custom recordings	-	-	-	•	-	-
REAL-TIME DISPLAY						
Summary table of main electric parameters	•	•	•	•	•	-
Voltage/current waveforms	-	-	-	•	-	-
Tables or histograms of Harmonics and THD%	-	-	-	•	-	-
Voltage/current vector diagram	-	-	-	•	-	-
ADDITIONAL CHARACTERISTICS						
Measuring range of curve I-V / Isc-Voc	1500V / 15A**	1000V / 15A	1500V / 15A**	-	1000V / 15A solo Isc-Voc	-
Measuring range for photovoltaic testing	-	-	1000VDC / 265VAC	1000VAC-DC 3000A	-	1000VDC / 600VAC 3000AC / 1000ADC
Measurement category	CAT III 300V	CAT III 300V	CAT III 300V	CAT IV 600V	CAT III 300V	CAT IV 300V
Touchscreen colour display	-	-	-	•	-	-
Backlit LCD display	•	•	•	-	•	-
Internal memory capacity	200 curves I-V	200 curves I-V	200 curves I-V 8 days@ PI=10 min	15MB 90 days@ PI 10min	999 Locations	2MB 8 days@ PI=10 min
USB port for data download onto Pen Drive	-	-	-	•	-	-
Provided PC interface with software for Windows	•	•	•	•	•	-
Built-in WiFi communication interface	•	•	•	-	-	-
Custom management of internal PV module database	•	•	•	-	•	-
Power supply with rechargeable battery and battery charger	-	-	-	•	-	•
Auto power off	•	•	•	•	•	•
Indication of recording duration for photovoltaic testing			•	•	-	-
Reference standard for mains quality	-	-	-	EN50160	-	-
Help on line on the display	•	•	•	•	•	-
Size (LxWxH) (mm)	235x165x75	235x165x75	235x165x75	235x165x75	235x165x75	300x265x214
Weight in kg (batteries included)	1,2	1,2	1,2	1	1,2	2,3
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Order code	**HV00500W**	**HV00400W**	**HV000IVE**	**HV00300N**	**HV00PVCS**	**HVMPP300**

* Optional set of leads KIT KELVIN necessary.

** Only I-V500w and SOLAR I-Ve (max current @1500V=10A, max current @1000V=15A).

ORDER CODE ***HV00500W*** / ***HV00400W*** / ***HV0001VE***

I-V500w | I-V400w | SOLAR I-Ve

MULTIFUNCTION DEVICES FOR MAINTENANCE AND TROUBLESHOOTING ON PHOTOVOLTAIC INSTALLATIONS

YouTube

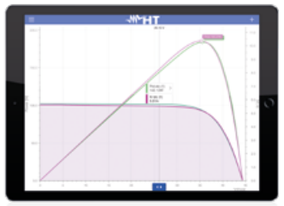
CAT II 1000VDC — MAX 1000VDC BETWEEN INPUTS

CAT III 300VAC — MAX 265VAC BETWEEN INPUTS

- Measurement of the I-V curve of one or more modules or of one whole string up to **1500V/15A****
- Measurement of open-circuit voltage and short-circuit voltage Voc/Isc up to **1500V/15A****
- Database of 30.000 selectable photovoltaic modules
- Automatic measurement of more strings in AutoSequence™ mode*
- Compatible with the App HTAnalysis™ via WiFi

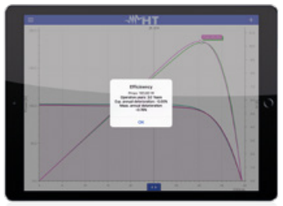
I-V400w allows **the on-site detection of the I-V curve** and of the main characteristic parameters both of a single module and of strings of modules for PV installations up to a maximum of **1000V** and **15A**.
For measuring the I-V curve, V400w manages an **internal database of the modules, which can be updated at any time by the user,** and comparison between the measured data with the rated values allows immediately evaluating whether the string or the module fulfills the efficiency parameters declared by the manufacturer.
The I-V curve can be measured also by decentralizing measurements of irradiation and temperature by using the optional remote unit SOLAR02, using the radio frequency connection (RF) to the master unit.
Also for V400w, **the display at the end of the test of the I-V curve** is a clear indication about the compliance with the specifications declared by the panel manufacturer.

* Optional set of leads KIT KELVIN necessary.
** Only I-V500w and SOLAR I-Ve (max current @1500V=10A, max current @1000V=15A).

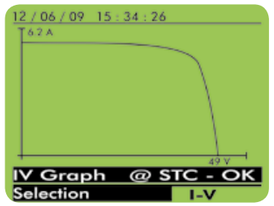


I-V curve and power curve.

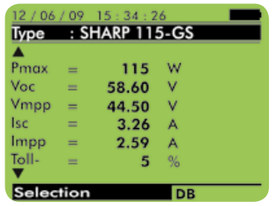
List with measured results.



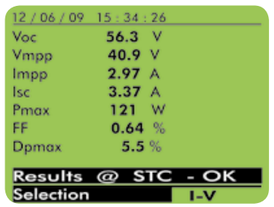
Comparison between foreseen cell deterioration and measured value.



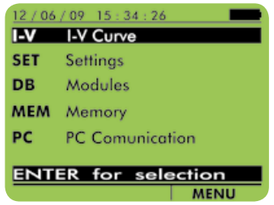
Result of I-V Curve: **OK**



Manual insertion of a module



Detail of the single results of I-V Curve: **OK**



General Menu

Functions

	I-V400w	*I-V500w*	*SOLAR I-Ve*
Maintenance of photovoltaic system			
Measurement of PV module/string output voltage	1000V	1500V**	1500V**
Measurement of PV module/string output current	15A	15A	15A
Resolution (spots) of I-V curve in Standard or Capacitive mode	128	128	128
Measurement of Voc-Isc-Pmax-Vmpp-Impp-Fill Factor	•	•	•
Measurement of cell temperature through external feeler	•	•	•
Measurement of irradiation [W/m²] through reference cell	•	•	•
Measurement of DC and rated power at module/string output	•	•	•
Detection of I-V curve through remote unit SOLAR-02	•	•	•
Measurement of resistance of series Rs of panels	• Max/Min	• Max/Min	• Max/Min
Direct comparison with reference conditions (STC - 1000W/m², 25°C)	•	•	•
Test result OK / NO	•	•	•
Internal database for managing up to 30 PV modules (30.000 modules by software)	•	•	•

	I-V400w	*I-V500w*	*SOLAR I-Ve*
Internal memory for data saving	•	•	•
Recalling measured data on the display	•	•	•
Optical/USB interface for data transfer onto the PC	•	•	•
Built-in WiFi communication interface	•	•	•
Help on line on the display	•	•	•
Efficiency measurements of the photovoltaic system			
DC/AC TRMS single-phase voltage	-	-	•
DC/AC TRMS single-phase current	-	-	•
Single-phase DC power / AC active power	-	-	•
Solar irradiation [W/m²] with reference cell HT304N	-	-	•
Panel and environmental temperature through probes	-	-	•
Remote unit SOLAR02 with RF connection	-	-	•
Display of environmental data in real time	-	-	•
Use of compensation relationships Cells/ Environment on Pdc	-	-	•
Parameter recording of a PV system with 5s to 60min programmable IP	-	-	•

Included accessories

SOLAR02	Remote unit for Irradiation and Temperature ***(SOLAR I-Ve)***
KITGSC4	Set of 4 cables + 4 alligator clips
KITPVMC3	Set of 2 adapters with connectors MC3
KITPVMC4	Set of 2 adapters with connectors MC4
HT4005K	Standard 200A AC clamp, diameter 40mm ***(SOLAR I-Ve)***
HT4004N	Standard 10-100A DC clamp, diameter 32mm ***(SOLAR I-Ve)***
HT304N	Sensor for irradiation measurement
PT300N	PT1000 probe for PV modules temperature ***(SOLAR I-Ve)***
M304	Mechanical inclinometer
TOPVIEW2006	Windows software + optical/USB C2006 cable
VA500	Rigid carrying case
	User manual on CD-ROM
	ISO9000 calibration certificate
	Quick guide

Optional accessories

MPP300	Accessory for (AC) three-phase efficiency verification up to (3MPPT) ***(SOLAR I-Ve)***
HT4005N	Standard AC 0÷5A, 0÷100A clamp, diameter 20mm ***(SOLAR I-Ve)***
HT96U	Standard 1-100-1000A AC clamp, diameter 54mm ***(SOLAR I-Ve)***
HT97U	Standard 10-100-1000A AC clamp, diameter 54mm ***(SOLAR I-Ve)***
HT98U	Standard 1000A DC clamp, diameter 50mm ***(SOLAR I-Ve)***
HP30C2	Standard 200-2000A AC clamp, diameter 70mm ***(SOLAR I-Ve)***
HP30C3	Standard 3000A AC clamp, diameter 70mm ***(SOLAR I-Ve)***
HP30D1	Standard clamp, diameter 83mm 1000A DC ***(SOLAR I-Ve)***
SP-0400	Shoulder strap to use the device with free hands
SP-0500	Sheaths to use the device with free hands
KITPVEXT25M	Set of 2 banana cables 4mm, Green/Black, 25m
606-IECN	Connectors with magnetic terminal
KITKELVIN	Test leads for measurements in automatic sequence

YouTube

CAT IV 600V

CAT III 1000V

MAX 1000V BETWEEN INPUTS

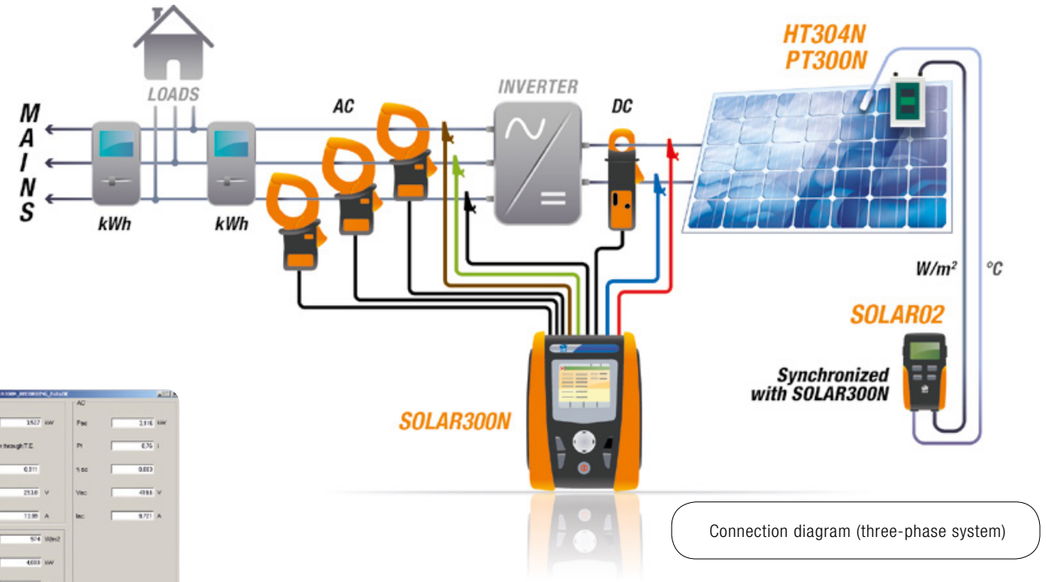
ORDER CODE ***HV00300N***

SOLAR300N

MULTIFUNCTION DEVICE FOR VERIFICATION OF SINGLE-PHASE AND THREE-PHASE PV SYSTEM EFFICIENCY AND POWER QUALITY ANALYSIS IN COMPLIANCE WITH STANDARD EN50160

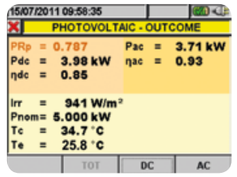
- New **touchscreen interface**
- Verification of the **efficiency** of the photovoltaic system
- **Analysis of power quality** and **energy consumption**

SOLAR300N tests **single-phase and three-phase photovoltaic systems**. For this kind of tests, it is necessary to guarantee **simultaneity** between power measurements carried out at the inverter and irradiation and temperature measurements carried out on the photovoltaic panels.
HT Instruments has introduced a **remote measuring device SOLAR02** which **acquires the values of solar Irradiation [W/m²], panel Temperature [°C] and environmental Temperature [°C] and transfers them onto SOLAR300N**, which inserts them onto the same string of power measurements an then elaborates them with the simultaneity required by the law in force.
SOLAR300N is not only a device for testing PV systems, but **also a powerful device for a complete analysis of power quality** according to standard EN50160 (harmonic analysis, voltage anomalies, flickers, unbalance, etc.).



Connection diagram (three-phase system)

Photovoltaic testing result on PC application TOPVIEW.



Photovoltaic testing result.

SOLAR300N IS ALSO AN ANALYZER FOR POWER QUALITY AND ENERGY CONSUMPTION

- Harmonics
- Analysis of recordings
- Measurement of energy consumption
- Flicker
- Voltage anomalies and spikes
- Inrush currents
- Vectors and waveforms

Functions

Efficiency measurements of the photovoltaic system

- DC/AC TRMS voltage (single-phase and three-phase)
- DC/AC TRMS current (single-phase and three-phase)
- DC/AC active power (single-phase and three-phase)
- Power factor cosj (single-phase and three-phase)
- Solar irradiation
- Panel and environmental temperature
- Display of testing result (OK/NOT OK)
- Remote unit SOLAR02 for measuring irradiation and temperature
- Periodic recording of power parameters with programmable PI

Analysis of power and energy consumption

- Recording of voltage and current harmonics (up to the 49th)
- Recording of voltage anomalies (dips, peaks) with resolution 10ms
- Flicker analysis according to EN50160
- Recording of Inrush Currents with resolution 10ms
- Recording of voltage spikes with resolution 5µs
- Complete analysis of power quality according to EN50160
- Touchscreen colour display
- Internal memory and USB output for PC connection
- Power supply with rechargeable Li-ION battery
- Rechargeable internal battery
- Help on line on the display
- Management of USB Pen Drive and compact flash card

Main features

Display:	Colour touchscreen with adjustable brightness
Power supply:	Rechargeable Li-ION, 3.7V battery
Internal memory:	15MB (duration 1 month @ IP=15min, 251 parameters)
External memory:	Compact Flash (CF) card
PC interface:	USB 2.0
Safety:	IEC/EN61010-1
Insulation:	double insulation
Pollution level:	2
Measurement category:	CAT IV 600V (to earth) CAT III 1000V (between inputs)
Unbalance:	IEC/EN61000-4-7
Power quality:	IEC/EN50160
Flicker:	IEC/EN61000-4-15
Reference standard and class:	IEC/EN61000-4-30 Class B
Size:	235x165x75mm
Weight (batteries included):	1kg

Included accessories

SOLAR02	Remote unit for Irradiation and Temperature
KIT800	Set of 5 cables + 5 alligator clips
HT4005K	Standard 200A AC clamp, diameter 40mm (3pcs)
HT4004N	Standard 10-100A DC clamp, diameter 32mm
HT304N	Sensor for irradiation measurement
PT300N	PT1000 probe for PV modules temperature
A0055	External AC/DC battery charger power supply 230V 50/60Hz*
YABAT0003HT1	Rechargeable Li-ION battery
PT400	Touch-screen pen
TOPVIEW2007	Windows software + USB C2007 cable
VA500	Rigid carrying case
	User Manual
	Quick guide
	ISO9000 calibration certificate

(*) Please check accessory line to find the correct power adapter for your country

Optional accessories

MPP300	Accessory for (AC) three-phase efficiency verification up to (3MPPT)
HT4005N	Standard AC 0÷5A, 0÷100A clamp, diameter 20mm
HT96U	Standard 1-100-1000A AC clamp, diameter 54mm
HT97U	Standard 10-100-1000A AC clamp, diameter 54mm
HT98U	Standard 1000A DC clamp, diameter 50mm
HP30C2	Standard 200-2000A AC clamp, diameter 70mm
HP30C3	Standard 3000A AC clamp, diameter 70mm
HP30D1	Standard clamp, diameter 83mm 1000A DC
HTFLEX33E*	Flex 3000A clamp, for power analysis, diameter 174mm
HTFLEX35*	Flex 3000A clamp, for power analysis, diameter 274mm
HT903	3x1-5A/1V box for TA connection
SP-0400	Shoulder strap to use the device with free hands
606-IECN	Magnetic connectors for voltage measurement
A0056	115V/50-60Hz power supply with American plug
CF800	1Gb Compact flash card
MCR800	Compact flash card reader

(*) can be used only for power analysis

YouTube

CAT III 300V

MAX 1000V BETWEEN INPUTS

ORDER CODE ***HV00PVCS***

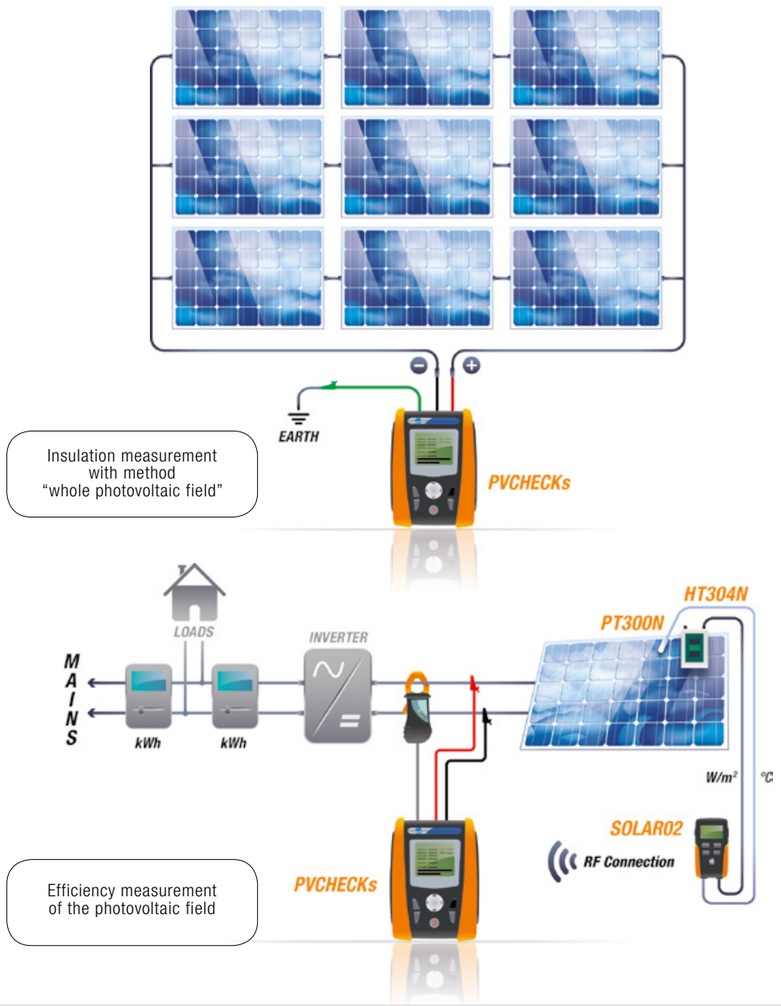
PVCHECKs

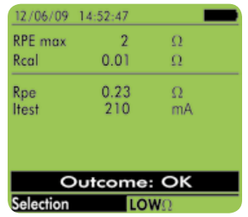
MULTIFUNCTION DEVICE FOR COMMISSIONING TESTS OF ELECTRIC SAFETY AND PERFORMANCE OF A PHOTOVOLTAIC SYSTEM

Automatic test in a sequence of:

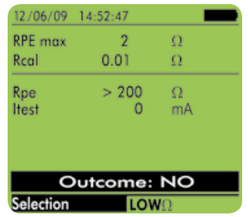
- **Measurement of insulation** up to 1000V DC
- **Open-circuit voltage** and **short-circuit current Voc/Isc**
- **Continuity** of **protective conductors** with 200mA

The multifunction device PVCHECKs allows quickly and safely carrying out the commissioning tests provided for a PV system (section in DC) and the functional test of modules/strings the system consists of according to the requirements of Standard **IEC/EN62446**.
When testing safety, PVCHECKs is a real innovation, since it is capable of **measuring insulation of a module, string or of a whole photovoltaic field (IEC/EN62446)** with no need to use an external switch to short-circuit the positive and negative terminals.
PVCHECKs also allows **checking the functionality of the connections and of the strings** in a photovoltaic field, according to the provisions of standard IEC/EN62446 by measuring the open circuit voltage and the short-circuit current at operating conditions (OPC) and referred to STC (via the optional measurement of irradiation, also with the use of optional accessories SOLAR02 and HT304N), providing an **immediate result** as regards the measurement just carried out, both in absolute terms and by comparison with the previously tested strings. Finally, PVCHECKs also allows analyzing the performance of the photovoltaic field (DC) under operating conditions (therefore connected to the inverter) with the use of optional accessories SOLAR02 and HT304N, providing an indication of the generated power and of the performance of the field itself.

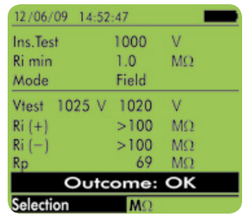




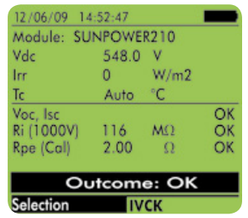
Continuity test result with 200mA **OK**



Continuity test result with 200mA **NOT OK**



Insulation measurement result at 1000V **OK**



Automatic sequence test result **OK**

Functions

Maintenance of photovoltaic system

- Continuity of protective conductors with test current 200mA
- Insulation measurement with test voltage 250,500 and 1000VDC
- Open-circuit voltage (VOC) measurement up to 1000V DC
- Short-circuit current (ISC) measurement up to 15A DC
- DC voltage - DC current - DC power measurement
- Measurement of irradiation [W/m²] through reference cell HT304N
- Environmental and photovoltaic module temperature measurement through PT300N probe
- Use of compensation relationships Cells/Environment on Pdc
- Measurements always compared to the values declared by the module's manufacturer
- Internal database for managing up to 30 PV modules (30.000 modules by software)
- Test measurement of string operation
- Mechanical inclinometer for verifying the correct inclination of sun rays
- Result for every measurement OK/NO
- Internal memory and USB output for PC connection
- Help on line on the display

Efficiency measurements of the photovoltaic system

- Efficiency measurement of the photovoltaic field (DC side)

Main features

Display:	LCD, 128x128pxl, with backlight
Power supply:	6x1.5V alkaline batteries type AA LR06
Auto power off:	after 5 minutes
Internal memory:	256kBytes
PC interface:	optical/USB
Safety:	IEC/EN61010-1
Safety of accessories:	IEC/EN61010-031
Measurements:	IEC/EN 62446
Insulation:	Double insulation
Pollution level:	2
Overvoltage category:	CAT III 1000VDC (to earth) Max 1000V between inputs
Size:	235x165x75mm
Weight (batteries included):	1.2kg

Included accessories

HT4004	Standard 10-100A DC clamp, diameter 30mm
KITGSC4	Set of 4 cables + 4 alligator clips
KITPCMC3	Set of 2 adapters with connectors MC3
KITPCMC4	Set of 2 adapters with connectors MC4
TOPVIEW2006	Windows software + optical/USB C2006 cable
BORSA2051	Soft carrying bag
	ISO9000 calibration certificate
	User manual and quick guide

Optional accessories

PT300N	PT1000 probe for PV modules temperature
SOLAR02	Remote unit for Irradiation/Temperature measurement
HT304N	Reference cell for irradiation measurement
M304	Mechanical inclinometer
SP-0400	Shoulder strap to use the device with free hands
KITPVEXT25M	Set of 2 banana cables 4mm, Green/Black, 25m
606-IECN	Connectors with magnetic terminal

YouTube

CAT IV 300VAC — MAX 600VAC BETWEEN INPUTS

CAT III 1000VDC — MAX 1000VDC BETWEEN INPUTS

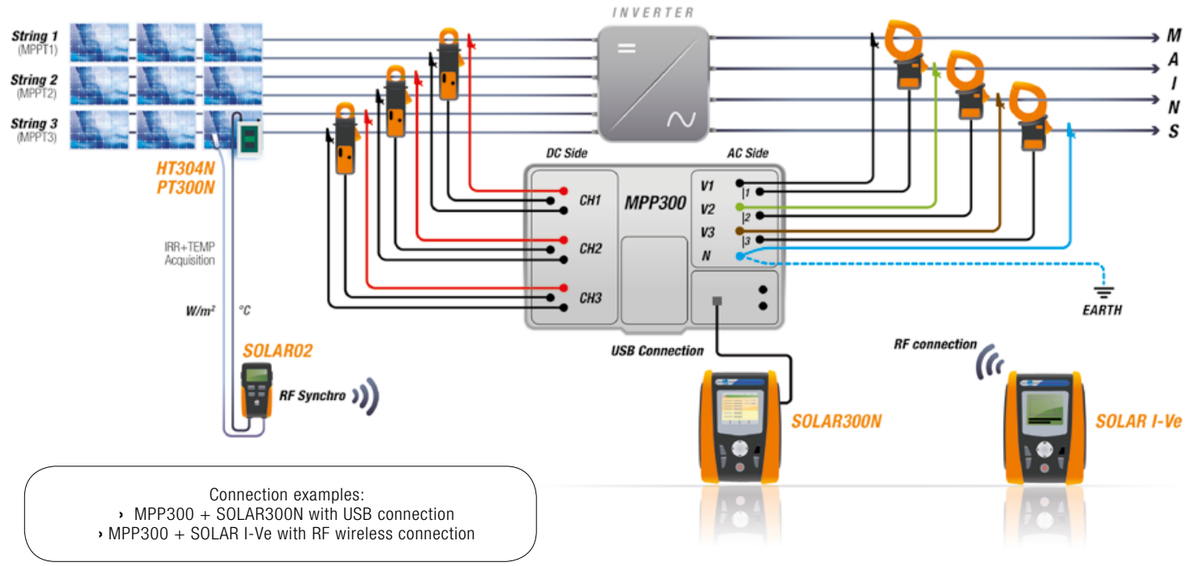
ORDER CODE **HVMPP300**

MPP300

ACCESSORY FOR MEASURING AND RECORDING THE EFFICIENCY OF A SINGLE- AND THREE-PHASE, SINGLE- AND MULTI-STRING PHOTOVOLTAIC SYSTEM (UP TO THREE MPPT).

- Simultaneous analysis of **3 strings**
- **Compatible** with SOLAR300N and SOLAR I-Ve
- **Integrated rechargeable battery**

MPP300 is an innovative accessory which allows **measuring and recording the main parameters which characterize single and three-phase, single and multi-string photovoltaic systems (up to three MPPT)**. Provided with a practical **rigid anti-shock case**, thanks to its **lightness** and its **reduced size** is the ideal solution for on-site use. MPP300 **interfaces** with SOLAR300N and SOLAR I-Ve for its settings, to start/stop recording electric and environmental parameters and to allow for the download of the recorded values. The master devices SOLAR300N or SOLAR I-Ve are only used in the initial and final phase of recording, and they do not play any active role while recording electrical and environmental parameters. Remote unit SOLAR02 (**synchronized** with MPP300) is positioned next to the photovoltaic modules to measure environmental parameters (**irradiation and temperature**). Thanks to this synchronization, **it is not necessary to place long connection cables between the environmental probes and the device** (cables which would impair the operator's movements) **nor to use a wireless connection** between the environmental probes and the device, what is generally impossible due to the attenuation of the signal caused by the presence of floors, reinforced concrete or metal structures.



Connection examples:
› MPP300 + SOLAR300N with USB connection
› MPP300 + SOLAR I-Ve with RF wireless connection

Synchronization between the two units **guarantees the necessary simultaneity of measurements** and the two separate and independent units make **measurements comfortable and safe under any condition.**
MPP300's **best partner is SOLAR I-Ve**: while MPP300 records the electrical and environmental parameters, it is possible to measure the I-V curves o strings and modules with SOLAR I-Ve, **thus saving time and money.**

- Practical rigid anti-shock case
- Small size (mm 300x265x140) for an extreme portability

Functions

- DC/AC TRMS voltage measurement (single-phase and three-phase)
- DC/AC TRMS current measurement (single-phase and three-phase)
- DC/AC power measurement (single-phase and three-phase)
- Simultaneous multi-string tests (max 3 MPPT)
- Connection with master unit SOLAR300N and SOLAR I-Ve
- Power supply with rechargeable Li-ION battery
- LED operating indications
- USB port for connection to unit SOLAR300N
- RF connection for connection to SOLAR02 and SOLAR I-Ve
- Internal memory for saving recordings

Main features

Inputs:	3 DC voltage inputs (CH1, CH2, CH3), 3 DC current inputs (CH1, CH2, CH3), 4 AC voltage inputs (L1, L2, L3, N), 3 AC current inputs (L1, L2, L3)
Front panel:	4 two-colour LEDs (red, green)
Power supply:	Rechargeable Li-Ion battery Duration >3 hours
Internal memory:	2 MBytes
Communication interfaces	USB + RF
Safety:	IEC/EN61010-1
Insulation:	double insulation
Pollution level:	2
Mechanical protection:	IP40 (open), IP65 (closed)
Measurement category:	CAT IV 300 VAC (to earth), 600 VAC (between inputs) CAT III 1000 VDC (to earth), 1000 VDC (between inputs)
Size:	300x265x140mm
Weight (batteries included):	2.3 kg

Included accessories

KITMPPDCW	Set of 2 cables, red and black banana-banana length 2m, 3 pieces
KITMPPDCC	Set of 2 alligator clips, black and red, 3 pieces
KITMPPACW	Set of 4 cables for AC voltage, 2m
KITMPPACC	Set of 4 alligator clips for AC voltage
A0055	External AC/DC battery charger power supply
C2007	USB cable
ACON3F4M	Adapter for the connection of clamps HT98U, HP30D1 and HT4004N, 3 pieces
BORSA2051	Soft carrying bag for accessories
	User Manual
	ISO9000 calibration certificate

Optional accessories

HT4004P	Standard 10-100ADC clamp, diameter 32mm (only MPP300)
HT4005N	Standard AC 0÷5A, 0÷100A clamp, diameter 20mm
HT4005K	Standard 200A AC clamp, diameter 40mm
HT96U	Standard 1-100-1000A AC clamp, diameter 54mm
HT97U	Standard 10-100-1000A AC clamp, diameter 54mm
HT98U	Standard 1000A DC clamp, diameter 50mm
HP30C2	Standard 200-2000A AC clamp, diameter 70mm
HP30C3	Standard 3000A AC clamp, diameter 70mm
HP30D1	Standard clamp, diameter 83mm 1000A DC
HTFLEX33E	Flex 3000A clamp, for power analysis, diameter 174mm
HTFLEX35	Flex 3000A clamp, for power analysis, diameter 274mm
606-IECN	Magnetic connectors for voltage measurement

POWER QUALITY ANALYZERS

POWER QUALITY ANALYZERS





	PQA824	PQA823	VEGA78	PQA820	PQA819
MAIN MEASUREMENTS	**POWER QUALITY ANALYZERS**				
AC/DC voltage in single-phase/three-phase systems	•	•	•	•	•
AC/DC current in single-phase/three-phase systems	•	•	•	•	•
Cosphi, Power Factor	•	•	•	•	•
Voltage unbalance (NEG%, ZERO%)	•	•	•	•	-
Active, reactive, apparent power/energy and DC power	•	•	•	•	•
Voltage and current harmonics up to the 49th with calculation of THD%	•	•	•	•	• Only THD
Voltage anomalies (dips, peaks) with a resolution of 10ms (@ 50Hz)	•	•	•	•	-
Voltage spikes with a resolution of 5µs (200kHz)	•	-	-	-	-
Electric motor starting current (INRUSH)	•	•	-	-	-
Voltage flickers (Pst, Plt)	•	•	-	-	-
Full analysis EN50160	•	•	-	-	-
Phase sequence	•	•	•	•	•
Neutral-Ground Voltage	•	•	•	-	-
Neutral current	•	•	•	•	-
MEMORY AND RECORDING					
Max number of simultaneously selectable parameters	251	251	251	383	44
Recording with selectable integration period	1s-60m	1s-60m	1s-60m	5s-60m	5s-60m
Indicative memory duration (in days @ PI=10min @ max number of parameters)	90 days	90 days	90 days	30 days	153 days
Indication of recording duration	•	•	•	•*	•*
Internal memory capacity	15MB	15MB	15MB	8MB	8MB
External compact flash card	•	•	•	-	-
Default and custom recordings	•	•	•	-	-
Snapshot saving	•	•	•	•*	•*
REAL-TIME DISPLAY					
Summary table of main electric parameters	•	•	•	•*	•*
Voltage/current waveforms	•	•	•	•*	•*
Tables or histograms of Harmonics and THD%	•	•	•	•*	•*
Voltage/current vector diagram	•	•	•	•*	•*
ADDITIONAL CHARACTERISTICS					
Measurement category	CAT IV 600V	CAT IV 600V	CAT IV 600V	CAT IV 300V	CAT IV 300V
Measurement by means of external CT and VT	•	•	•	•**	•**
Touchscreen colour display	•	•	•	-	-
Power supply and rechargeable battery recharging	•	•	•	• Auto power supplied	• Auto power supplied
Auto power off	•	•	•	•	•
USB port for data download onto Pen Drive	•	•	•	• Only PC	• Only PC
Provided PC interface with software for Windows	• USB	• USB	• USB	• Wi-Fi / USB	• Wi-Fi / USB
Context help active on each screen	•	•	•	-	-
Protection password	•	•	•	-	-
Size (LxWxH) (mm)	235x165x75	235x165x75	235x165x75	235x165x75	235x165x75
Weight in kg (batteries included)	1	1	1	0,7	0,7
Reference standard for mains quality	EN50160	EN50160	-	-	-
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Order code	**HV000824**	**HV000823**	**HV000078**	**HV000820**	**HV000819**

* Through App HTANALYSIS and software TOPVIEW.

** Adapter ACONBIN necessary.

ORDER CODE ***HV000824*** | ***HV000823*** | ***HV000078***

PQA824 | PQA823 | VEGA78

THREE-PHASE POWER QUALITY ANALYZERS

CAT III 600V

MAX 1000V BETWEEN INPUTS

YouTube

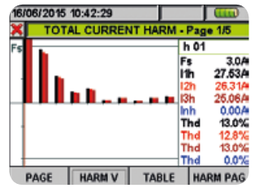
Functions

- Simultaneous measurement of power parameters on single-phase and three-phase 3-wire and 4-wire systems
- 5 input channels for voltages and 4 input channels for currents
- Numerical and graphic display (waveforms)
- Voltage and current vector diagram
- Voltage and current harmonic analysis up to the 49th with THD%
- Recording of voltage anomalies (dips, peaks) with 10ms resolution
- Flicker analysis in compliance with EN50160 ***(only PQA823 - PQA824)***
- Recording of fast transients (spikes) with resolution 5µs ***(only PQA824)***
- Recording of motor starting currents with resolution 10ms (INRUSH) ***(only PQA823 - PQA824)***
- Voltage unbalance (NEG%, ZERO%)
- Integration period selectable from 1s to 60min
- Preset and custom recordings
- Touchscreen colour display
- Power supply with rechargeable Li-ION battery
- Memory extension with external Compact Flash card
- Possibility of connecting an external pen drive
- PC interface with USB port

Main features

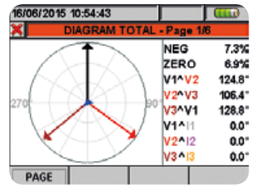
Display:	TFT, 65536 colours, (320x240pxl) with high contrast, touch screen
Power supply:	1x3.7V rechargeable Li-ION battery, with external adapter, duration >3h, auto power of after 5 minutes' idling
Internal memory:	15Mbyes (duration approx. 3 months @ IP=15min and 251 selectable parameters)
Memory extension:	external Compact Flash card (ca. 32Mb)
PC interface:	USB 2.0
Safety:	IEC/EN61010-1
Insulation:	double insulation
Measurement category:	CAT IV 600V (Phase - Neutral) CAT IV 1000V (between inputs)
Power quality and Flicker:	EN50160
Electric energy quality:	EN61000-4-30, class B
Unbalance:	EN61000-4-7, EN50160
Size:	235x165x75mm
Weight (battery included):	approx 1kg

PQA824, **PQA823** and **VEGA78** are **three-phase and single-phase power analyzers**. They allow for the analysis of **all electric parameters which can be measured nowadays**, elaborating them easily and quickly.
These devices can be easily programmed thanks to the **new colour touchscreen display** with icon menu, which guarantees the selection of internal parameters in a simple and intuitive way.
The **Help online** function **available on each screen** is a valid and concrete help for the operator in understanding how the devices are used. Each internal parameter is easily reached through the typical tree structure, widely known to Windows system users.
The devices allow **displaying** the parameters in **numerical and graphic** mode, both for **periodical analysis** and for **harmonic analysis**.
The graphic function "**vector diagram**" allows, among other things, to immediately evaluate the **phase angle between input voltage and current signals**, thus defining the loads' nature.
The **15MB internal memory** allows saving recorded data for a remarkable number of consecutive days.
Model **PQA824**, compared to PQA823 and VEGA78, **also allows detecting spikes on input voltages with a minimum resolution of 5µs (200kHz)**, setting different trigger thresholds which are very useful when solving typical problems on installations (monitoring atmospheric charges, commutations of switching suppliers, disturbance frequencies, etc.)

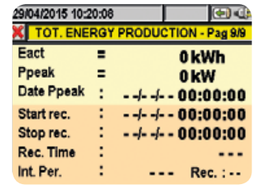


Current harmonics' display in real time.

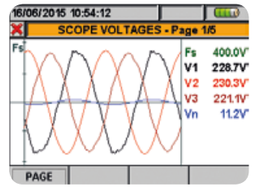
Display of recorded power graph.



Voltage and current vector diagram.



Energy consumption display.



Waveform display (voltage).

General Menu.

Included accessories

HTFLEX33E	Flex clamp 3000A, diameter 174mm, 4 pieces
KIT800	Set of 5 cables + alligator clips
A0055	AC/DC battery charger power supply 230V 50/60Hz*
YABAT0003HT1	Rechargeable 3.7V Li-ION battery
PT400	Touch-screen pen
TOPVIEW2007	Windows software + USB cable
VA500	Rigid Soft carrying bag
	User manual on CD-ROM
	Quick user guide
	ISO9000 calibration certificate

(*) Please check accessory line to find the correct power adapter for your country

Optional accessories

HTFLEX35	Flex 3000A AC clamp, diameter 274mm
HT96U	Standard 1-100-1000A AC clamp, diameter 54mm
HT97U	Standard 10-100-1000A AC clamp, diameter 54mm
HT98U	Standard 1000A DC clamp, diameter 50mm
HP30C2	Standard 200-2000A AC clamp, diameter 70mm
HP30C3	Standard 3000A AC clamp, diameter 70mm
HT4005N	Standard 5-100A AC clamp, diameter 20mm
HT903	3x1-5A/1V box for external TA connection
A0056	External power supply 110VAC-60Hz /12VDC
CF800	1GB Compact Flash Card
MCR800	Compact flash card reader
606-IECN	Connector with magnetic terminal
SP-0400	Set of straps for slinging the instrument over one's shoulder

ORDER CODE ***HV000820*** | ***HV000819***

PQA820 | PQA819

THREE-PHASE AND SINGLE-PHASE POWER QUALITY ANALYZERS

CAT IV 300V
MAX 415V BETWEEN INPUTS

PQA820 e PQA819 are the **innovative** proposal by HT to **easily analyze** all involved components on a **three-phase** or **single-phase** electric system.
When designing them, HT has taken particular care of three aspects: **setting**, the operating or storage environment and data transfer.

- PQA820 and PQA819 **do not need to be set**. They simply need to be connected, started and they respectively record 383 and 44 quantities simultaneously.
- They are provided with a comfortable **IP65** case, which allows working **in any kind of environment**.
- When recording has finished, **thanks to the WI-Fi connection**, the devices are capable of transferring all data onto a **tablet**, **smart phone** or **PC**.

Further to the Wi-Fi connection, PQA devices are provided with USB connection for transferring data via cable to the PC through **the provided TopView software**.
They do not need any batteries since they are **auto power-supplied** from the power they are analyzing.
The **internal battery is automatically recharged** by the input voltage and will provide the necessary energy to **go on recording in case power supply is interrupted**.

To make the most of the technology used by PQA820 and PQA819 we recommend using the **HTanalysis App** (**available for free download** on AppStore and Google Play) on a tablet or smart phone.

Here are some of the functions of HTanalysis:

- Display of measured data on high-definition screen.
- Possibility of "scrolling" through a determined waveform and immediately detecting its critical "moments": it will be sufficient to "touch" a certain spot of the screen in which the measured signal is proposed to immediately obtain all necessary information in order to understand what happened in that spot and in that particular moment!

PQA820 and PQA819 respectively record 383 and 44 quantities which can be **recalled and dragged onto the screen** to be **compared between each other**; for example, if you are displaying the trend of voltages and **you want to check for the possible presence of harmonic distortion**, it will be sufficient to scroll through the list of recorded measures and **drag the one relevant to harmonics to the screen**.
The same can be done for all other quantities: **power, cosphi, current, energy,** etc.
Everything can then be shared on **HT Cloud**, the web database created by HT to **archive** recordings and **share them** quickly with anyone around the world. Through HTCLOUD™ you will be able to **share all measurements with you colleagues** and/or download them from **any PC/Mobile device connected on the web**.

IP65 - Waterproof and resistant to extreme conditions.

Functions

- AC TRMS voltage in single-/three-phase systems
- AC TRMS current in single-/three-phase systems
- Active, Reactive and Apparent Power/Energy
- Cosphi and Power Factor
- Voltage, Current, DC Power
- Neutral current ***(only PQA820)***
- Voltage dips and peaks on 10ms ***(only PQA820)***
- Voltage unbalance (NEG%, ZERO%) ***(only PQA820)***
- Measurements using external CT and VT
- Voltage/current waveforms
- Histograms of voltage/current harmonics and THD%
- Voltage/current vector diagram
- Periodical recording with selectable PI
- Maximum number of simultaneously recorded quantities
  PQA820: 383 ***PQA819:*** 44
- Voltage and current harmonic analysis up to the 49th
- Calculation and recording of voltage/current THD%
- Indication of recording duration

Main features

Power supply:	rechargeable Li-ION battery
External power supply:	100 ÷ 415V, 50/60Hz
Recording duration	> 30 days (@ PI = 10min) ***(PQA820)***
	> 230 days (@ PI =15min) ***(PQA819)***
Recording period:	5, 10, 30s, 1, 2, 5, 10, 15, 60min)
PC interface:	USB 2.0 and Wi-Fi
Safety:	IEC/EN61010-1, double insulation
Mechanical protection:	IP65 (closed case)
Measurement category:	CAT IV 300V, max 415V between inputs
Reference standards:	EN50160
Operating temperature:	0 ÷ 40°C
Operating humidity:	<80%RH
Storage temperature:	-10 ÷ 60°C
Storage humidity:	<80%RH
Size:	235x165x75mm
Weight (battery included):	approx 0.7 kg

Included accessories

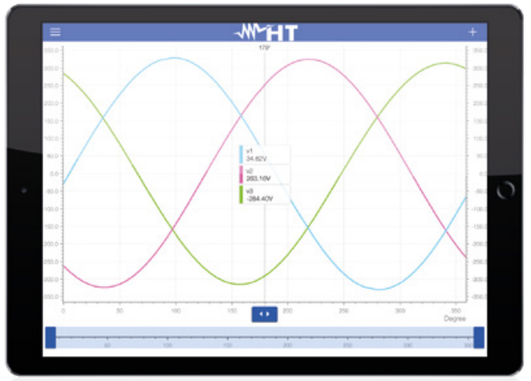
KITMPPACW	Set of 4 measuring cables
KITMPPACC	Set of 4 alligator clips
606-IECN	Adapters with magnetic terminal (4x)
HTFLEX33L	Flex 1000A AC clamp, diameter 174mm (4x)
TOPVIEW2007	PC Windows software + USB cable
BORSA2051	Soft carrying bag for accessories
	Quick user guide
	ISO9000 calibration certificate
	User manual on CD-ROM

Optional accessories

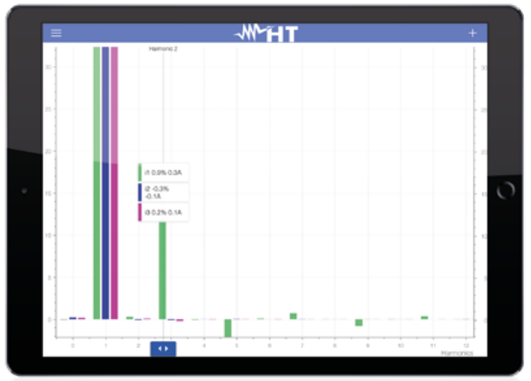
HT96U	AC clamp for leakage current, 1-100-1000A/1V, diameter 54mm
HT97U	Standard 10-100-1000A AC clamp, diameter 54mm
HT98U	DC clamp for leakage current, 1000A/1V, diameter 50mm
HP30C2	Standard AC 200-2000A/1V clamp, diameter 70 mm
HP30D1	Standard DC 1000A/1V clamp, diameter 83 mm
HT903	3x1-5A/1V box for connection to external CT
ACONBIN	Adapter for the connection of standard clamps

GSC60|PQA820|PQA819
WITH HTANALYSIS™

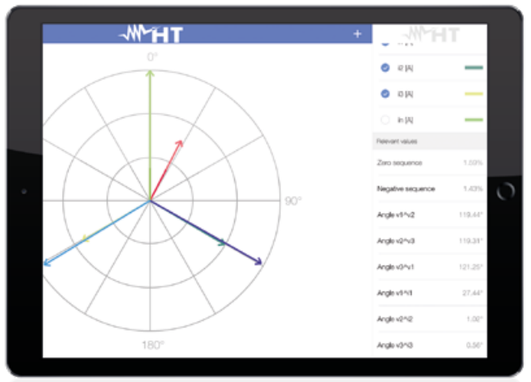
More information on **page 38**



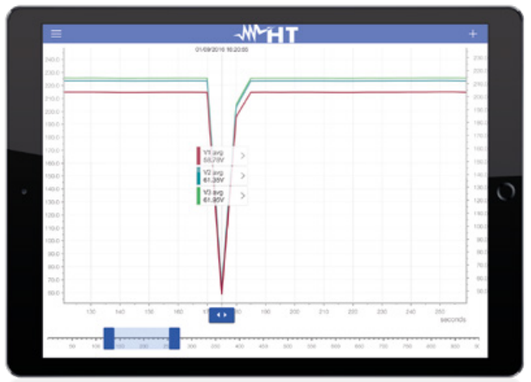
Voltage and current waveforms.



Current and voltage harmonics.



Voltage and current vector diagram.



Zoom on a voltage and current drop.

Jump function
1 Click on the arrow
next to the desired value.

Jump function
2 It switches to harmonic values in real-time.

DATA LOGGERS




	XL421	XL422	XL423	XL424
MAIN MEASUREMENTS	**DATA LOGGERS**			
TRMS	•	•	•	•
AC voltage in single-phase/three-phase systems	-	-	• Single-phase	• Single-phase / three-phase
AC current in single-phase/three-phase systems	• Single-phase	• Single-phase / three-phase	-	-
MEMORY AND RECORDING				
Max number of simultaneously selectable parameters	1	3	1	3
Recording with selectable integration period	1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min	1s, 6s, 30s, 1min, 5min
Indicative memory duration (single-/three-phase in days @ PI=5min)	455	455 / 1820*	455	455 / 1820*
Internal memory capacity	1MB	1MB	1MB	1MB
ADDITIONAL CHARACTERISTICS				
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
Order code	**HV000421**	**HV000422**	**HV000423**	**HV000424**

* According to battery duration.

CAT IV 600V

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 a 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

CAT IV 600V

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 a 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 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.

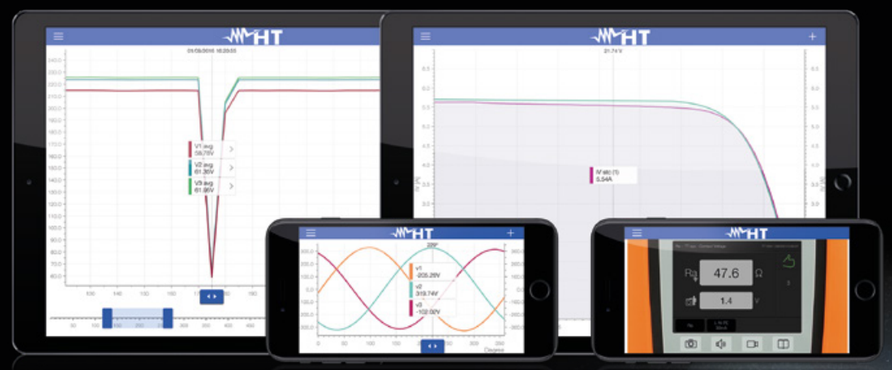
WITH
GSC60, PQA820, and PQA819

- 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.

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.

Available on the Google play | Available on the App Store



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

RJ-45 WIRE MAPPING

NEW

NEW


MACROTEST G3


MACROTEST G2


MACROTEST G1


GSC60


COMBI G2


COMBI 420/421


M75


M74


JUPITER


NEPTUNE


FULLTEST3

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 = 30mA Only standard	• A = 30mA AC = 30mA 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 49th +THD% + Voltage anomalies	• 25th no Anomalies	• 25th no Anomalies	-	• (3) with Recording		• 25ª	• 49ª	-	-	• 25th no Anomalies	• 25th 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
Order code	**HV005036**	**HV005038**	**HV005037**	**HV000060**		**HV0000G2**	**HV004210 (421) HV000420 (420)**	**HV000075**	**HV000074**	**HR00JUPI**	**HR00NEPK**	**HV000003**

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

ORDER CODE ***HV000060***

GSC60

A UNIQUE INSTRUMENT FOR MAINS ANALYSIS AND VERIFICATION OF ELECTRIC SAFETY

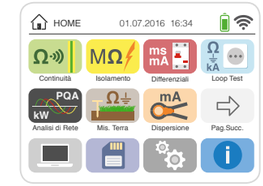
GSC60 is the only device in the world which can perform the verification of electric safety according to IEC/EN61557-1 and the analysis of single-phase/three-phase mains and electric consumption. IT has been designed to make the safety of electric system visible, understandable and assessable in a simple 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.

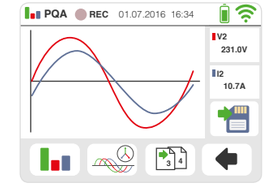
Global Connection.

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.



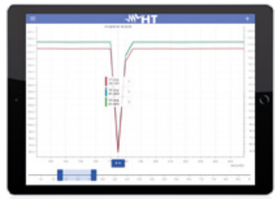
HTOS™ Managing the Power.

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 49th
- 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
KITTERRNE	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

WiFi™ HTAnalysis™ HT Cloud™ CAT IV 300V MAX 415V BETWEEN INPUTS 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.

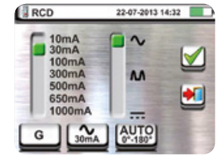
MacrotestG3 is a revolutionary device.
Its TFT colour display with **touch-screen** allows using this device in a completely new manner. **MacrotestG3 makes available on its display all possible variables to obtain a perfect measurement;** your task will only be to "**touch**" what you really want to 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 (0.1mOhm) 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.


Measurement of leakage current with optional clamp HT96U.

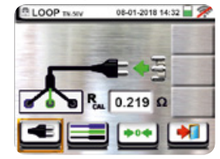

Earth resistance measurement with clamp T2100.


Start/stop measuring with remote lead PR400.

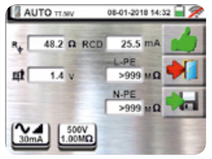


Selection of RCD type and tripping current.

Selection of test voltage and minimum limit value on MΩ measurement.

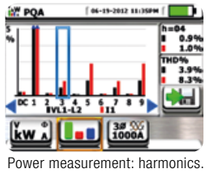


Zeroloop: compensation of the resistance of the test cables used for Loop impedance measurement.



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

Power measurement.

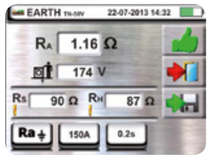


Power measurement: harmonics.

Advanced Loop.

Advanced Loop: negative result of breaking capacity test.

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

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

Included accessories

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

Optional accessories

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

ORDER CODE ***HV0000G2***

COMBIG2

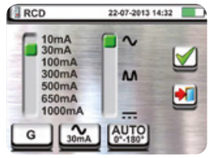
ADVANCED MULTIFUNCTION DEVICE FOR VERIFICATION OF ELECTRIC SAFETY OF DOMESTIC AND INDUSTRIAL ELECTRIC SYSTEMS (IEC/EN61557-1)

- **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** o **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.

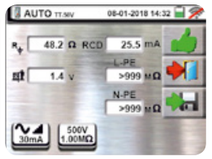

Measurement of leakage current with optional clamp HT96U.



Selection of RCD type and tripping current.

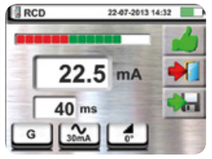
Selection of test voltage and minimum limit value on measurement.

Zeroloop: compensation of the resistance of the test cables used for Loop impedance measurement.



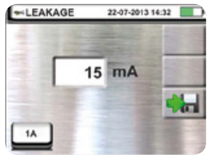
Autosequence: automatic sequence of measurements of Overall earth resistance, RCD test and Insulation L-PE, N-PE.

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

Power supply:	6x1.2V rechargeable batteries type AA NiMH or 6x1.5 type AA alkaline
Battery life:	> 550 test (alkaline)
Display:	Resistive touch screen, colour LCD, resolution 320x240 pxl
Memory:	999 locations, 3 levels of markers
PC interface:	Optical/USB and WiFi
Safety:	IEC/EN61010-1, double insulation
Operating humidity:	<80%RH
Operating temperature:	0 ÷ 40°C
Storage humidity:	<80%RH
Storage temperature:	-10 ÷ 60°C
Measurement category:	CAT III 240V, max 415V between inputs
Pollution level:	2
Reference standard:	IEC/EN61557-1-2-3-4-5-6-7
Size (LxWxH):	225x165x75mm
Weight (batteries included):	1.2 kg

Included accessories

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

Optional accessories

HT96U	AC clamp for leakage current, 1-100-1000A/1V, diameter 54mm
IMP57	Accessory for measuring Loop impedance with high resolution
SP-0400	Set for slinging the instrument over one's shoulder
606-IECN	Adapter for leads with magnetic terminal
1066-IECN	Connector for cable extension banana 4mm
RCDX10	Accessory for industrial RCDs up to 10A
YABAT0003000	1.2V NiMH AA rechargeable battery, 6 pieces
YABAT0004001	Battery charger for 6 AA/AAA batteries
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 illuminance measurement

ORDER CODE ***HV005037*** | ***HV005038***

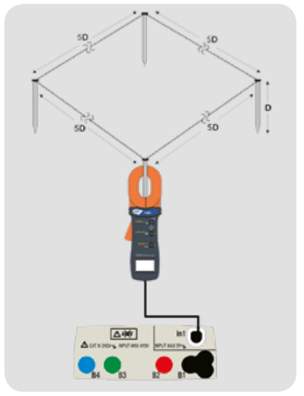
MACROTESTG1
MACROTESTG2

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

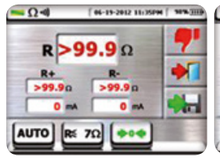
- **Earth resistance** by **voltammetric method** with 2 or 3 spots in TT, TN and IT systems, **overall earth resistance measurement** and with **clamp meter** T2100 (optional).
- **Ground resistivity.**
- **Measurement of electric parameters in single-phase** installations (V, I, W, VAR, VA, PF)
- Measurement of **insulation resistance (Macrotest G2).**
- Measurement of **continuity** of protection 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** o **NOT OK**.

Measurement of earth resistance with Clamp T2100.



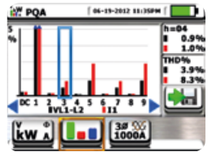
Example of measurement diagram with T2100.



Measurement result negative.

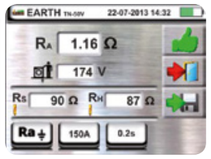
Selection of test voltage and minimum limit value on measurement.

Power measurement.



Power measurement: harmonics.

Selection of earth measurement type.



Earth resistance measurement result OK.

Use on tablets through the HTAnalysis™ App.

Measurement of earth impedance by voltammetric method.

Start/stop measuring with remote lead PR400.

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

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

Included accessories

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

Optional accessories

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

YouTube

CAT III 240V
MAX 415V BETWEEN INPUTS

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 (illuminance, 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**.

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 49th with THD%
- Measurement of environmental parameters (temperature, humidity, illuminance) 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 illuminance measurement

CAT III 550V

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 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 ***(only M75)***
CH1	Remote unit #1 ***(only M75)***
CH2	Remote unit #2 ***(only M75)***
YAAMS0000000	(3x) RJ45 patch cable ***(only M75)***
BORSA75	Soft carrying bag
	User manual on CD-ROM, calibration certificate ISO9000 and Quick user guide

Optional accessories

HT96U	Standard 1-100-1000A/I V 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. ***(only M75)***
REM38	Kit of 6 remote units (no. 3, 4, 5, 6, 7, 8) ***(only M75)***

YouTube Bluetooth™ CAT III 300V SAFETY TESTS CAT II 300V FUNCTIONAL TESTS

ORDER CODE ***HV000003***

FULLTEST3

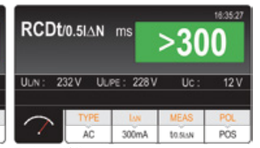
MULTIFUNCTION DEVICE FOR SAFETY TESTS
ON SWITCHBOARDS AND MACHINES ACCORDING
TO IEC/EN60204-1:2006 AND IEC/EN61439-1

- **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**.

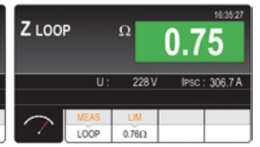
FULLTEST at work

2-wire continuity test



Test on RCDs

4-wire continuity test



Measurement of Loop impedance

Measurement of insulation resistance

Measurement of non-trip earth resistance

Dielectric strength test

Residual voltage measurement

Compact USB printer with rechargeable battery (Optional)

Soft carrying bag for accessories.

IMP57 (Optional)

HT96U (Optional)

FT3R-GLP (Optional)

FT3RMTCT (Optional)

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

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

Included accessories

	Integrated power supply cable
2317-IECIV-200-R	Test cable 2.5mm², 2m, red, 2 pieces
2310-IECIV-200-B	Test cable 0.75mm², 2m, blue
2310-IECIV-200-V	Test cable 0.75mm², 2m, green
2310-IECIV-200-N	Test cable 0.75mm², 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
FT3KBDEN	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.

EARTH RESISTANCE AND STEP/CONTACT VOLTAGE TESTERS

EARTH RESISTANCE AND STEP/CONTACT VOLTAGE MEASURING DEVICES

GEO416

M71

T2000 - T2100

HT2055

MAIN MEASUREMENTS	EARTH RESISTANCE			STEP/CONTACT VOLTAGE
TRMS	•	•	•	•
Measuring range	50KΩ	50KΩ	1KΩ	200Ω
Insulation with voltage 50, 100, 250, 500, 1000VDC	-	-	-	-
Earth resistance by 2 and 3-wire method	•	•	-	•
Ground resistivity by 4-wire method	•	-	-	•
Compensation of disturbance voltages	•	•	-	•
Compensation of test cables	•	•	-	•
Direct measurement on earth probes without any cable interruption	-	-	•	-
Measurement of leakage current on earth systems	-	-	• Only for T2000	-
Measurement of step/contact voltage	-	-	-	•
ADDITIONAL CHARACTERISTICS				
Measurement category	CAT III 240V	CAT III 240V	CAT III 150V	CAT IV 50V
Detection of disturbance currents on measurement	•	•	-	•
LCD display	•	•	•	•
Backlight	•	-	•	•
AutoPowerOFF	•	•	•	•
Help on line on the display	•	-	-	•
Internal memory	•	-	•	•
Optical/USB serial port for PC connection	•	-	-	• RS-232/USB
USB port for device data download	-	-	• Only for T2100*	-
Size (LxWxH) (mm)	225x165x75	240x100x45	293x90x66	230x115x103
Weight in kg (batteries included)	1,0	0,6	1,3	30,8
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Order code	**HV000416**	**HV000071**	**HP002000 (T2000) HP002100 (T2100)**	**HN002055**

* Compatible with Macrotest G1, G2 and G3.

CAT III 265V

ORDER CODE ***HV000416***

GEO416

DEVICE FOR MEASURING EARTH RESISTANCE AND GROUND RESISTIVITY

GEO416 has been developed to measure **earth resistance with 2 wires, 3 wires and 4 wires** by **voltammetric method** and ground resistivity. These values are extremely important while designing earth systems. The 2-wire method, by taking advantage of appropriate external masses as a reference (metal surfaces, tubes, neutral conductor, etc.), is particularly useful in domestic environments where, because of logistic problems, it is not possible to use the 3-wire method.
The device allows carrying out **measurements with a wide measuring range (up to 50kOhm)** with an efficient internal compensation of the disturbance effects found on the installations.
GEO416 is provided with an **internal memory for saving measurements** and with an **optical/USB interface for transferring** measured data onto the PC.

Functions and characteristics

- Earth measurement with 2 and 3 terminals
- Ground resistivity by 4-wire method
- Measuring range: 0.01Ω - 50kΩ
- Compensation of disturbance voltages
- Compensation of test cables
- Context help on the display
- Storage of results
- Interface: optical/USB for PC connection
- **Safety: IEC/EN61010-1**
- **Measurement category: CAT III 265V**
- **Power supply with batteries type AA: 4x1.5V**
- **Size (LxWxH): 222x162x57mm**
- **Weight (batteries included): 1 kg**

Included accessories

KITTERRNE	Set of 4 cables + 4 metal probes
COC4-UK	Set of 4 alligator clips
BORSA2000	Soft carrying bag
	User Manual
	ISO9000 calibration certificate

Optional accessories

TOPVIEW2006	Windows software for PC + optical/USB cable
1066-IECN	Connector for cable extension 4mm
SP-0400	Set of straps for slinging the instrument over one's shoulder
VA500	Rigid transport case for device and accessories
YABAT0003000	1.2V NiMH AA rechargeable battery, 6 pieces
YABAT0004001	Battery charger for 6 AA/AAA batteries

CAT III 240V

YouTube

ORDER CODE ***HV000071***

M71

DEVICE FOR MEASURING EARTH RESISTANCE

M71 has been developed to measure **earth resistance with 2 wires and 3 wires** by **voltammetric method** in compliance with standard IEC/EN61557-1.
This device allows carrying out measurements with a **wide measuring range (50kΩ)** and an efficient internal automatic compensation of the disturbance effects found on the installations, and it is provided with an **ergonomic design** with electronic function selector for **quickly** carrying out the tests.
The 2-wire method allows carrying out earth measurement by taking advantage of appropriate external masses as a reference (metal surfaces, tubes, neutral conductor, etc.), which is particularly useful in domestic environments where, because of logistic problems, it is not possible to use the 3-wire method.

Functions

- Earth measurement with 2 terminals
- Earth measurement with 3 terminals
- Measuring range: 0.01Ω -50kΩ
- Compensation of disturbance voltages
- Compensation of test cables

Included accessories

KIT0071	Set of 3 cables + 3 alligator clips + 2 metal probes
SP-6085	Soft carrying bag
	User manual on CD-ROM
	Quick user guide
	ISO9000 calibration certificate

Main features

Power supply:	batteries type AA 4x1.5V
Display:	LCD display
Pollution level:	2
Safety:	IEC/EN61010-1
Measurement category:	CAT III 240V
Size (LxWxH):	240x100x45mm
Weight (batteries included):	630g

Optional accessories

1066-IECN	Connector for cable extension 4mm

CAT III 150V

TRMS

YouTube

ORDER CODE ***HP002000*** | ***HP002100***

T2000 | T2100

CLAMP METERS FOR MEASURING
EARTH RESISTANCE WITH STAKELESS
TESTING METHOD AND LEAKAGE CURRENT
UP TO 20A AC

T2000 e T2100 are professional voltammetric clamps **specially developed to evaluate resistance of earth rods with no need to disconnect any part of the system**. The inner part of the device is made of 2 jaws, one for current reading and the other for voltage generation. The voltage jaws generate a potential (E) on the loop during resistance (R) measurement. A current (I) is consequently generated on the loop and is measured by the current jaws. Based on the value of parameters E and I, the instrument displays the resistance R value calculated as their ratio. The value measured by the device can be used in case the single rods do not influence each other. T2000 also measures **AC current up to 20A** and **leakage current with resolution 0.05mA**.
This devices comply with standard **IEC/EN61010-1** in **CAT III 150V** and they are the ideal solution for measurements to be carried out both in domestic and in industrial environments.

Functions

- Earth resistance with stakeless testing method
- Measurement of leakage current on earth systems ***(only T2000)***
- Setting of alarm thresholds on measurements
- Storage of measurement results
- Detection of disturbance currents on measurement
- Data HOLD, Backlight, Auto Power OFF
- Maximum diameter for clamp 32mm
- Serial interface RS-232 for connection to devices of ***MacrotestG series (only T2100)***

Technical Specifications

Resistance measurement
- Measuring range Ω: 0.010 ÷ 1000
- Resolution Ω: 0.001 ÷ 20
- Basic accuracy Ω: ± (1%reading + 0.01)

TRMS current measurement *(only T2000)*
- Measuring range: 0.00mA ÷ 20A
- Resolution: 0.05mA ÷ 0.01A
- Basic accuracy: ± (2.5%reading + 1mA)

Main features

Power supply:	batteries type AA 4x1.5V
Memory:	99 locations
Display:	LCD 4-digit display + decimal point, backlight
Pollution level:	2
Safety:	IEC/EN61010-1-2-032
Measurement category:	CAT III 150V
Size (LxWxH):	293x90x66mm
Weight (batteries included):	1320g

Included accessories

	Resistive test loop
	Batteries
	User Manual
	ISO9000 calibration certificate
C2100	Connection cable Hypertac / Jack 3,5mm RS-232 ***(only T2100)***
	Rigid Carrying case

CAT IV 50V

CAT II 300V

ORDER CODE ***HN002055***

HT2055

METER FOR STEP/CONTACT VOLTAGE UP TO 50A

HT2055 consists in a **power unit** and a **voltmetric unit**, necessary for carrying out step and contact voltage measurements in **industrial installations (such as TN systems, transformer cabinets) with a rated test current up to 50A**. The two units, **synchronized** in time and current are capable of providing the correct value of step and contact voltages consistently with the real current values measured by the power unit, also taking into consideration the disturbance effects found on the measured circuit. It is also capable of measuring **earth resistance and ground resistivity by the classical voltammetric method**.
These measurements can be saved in the **internal memory** of the voltmetric unit and downloaded onto the PC through the provided Windows software.

Remote unit

Soft carrying bag
for remote unit and accessories

Cable 10mm² with cable winder
and alligator clip, 50m

Red measuring cable,
50m

Black measuring cable, 3m,
with industrial plugs, 2 pieces

- Measurement of step/contact voltage with separate units
- Synchronization of units for correct measurements
- Test current selectable up to 50A
- LCD display on both units
- Earth resistance measurement
- Compensation function of disturbance effects
- Internal memory for measured data saving
- USB and RS-232 ports for communication between unit and PC

Characteristics

Power unit

- Power supply: 110/230V AC, 50/60Hz
- Output power: 900VA
- Output current: max 55A
- Test frequency: 55Hz
- Voltage measurement: 0.1÷999V
- Resolution: 0.1÷1V
- Basic accuracy: ±2%reading
- Display: LCD 240x128 dots + backlight
- Memory: 2000 locations
- Communication interface: RS-232
- Measurement category: CAT III 300V
- Protection: fuse T 6.3A/250V
- Pollution level: 2
- Mechanical protection: IP40 (closed case)
- Size (LxWxH): 335x335x160mm
- Weight: 28kg

Voltmetric unit

- Voltage measurement: 0.1÷999V
- Resolution: 0.1÷1V
- Resistance measurement: 0.001÷99.99Ω
- Resolution: 0.01Ω
- Basic accuracy: ±2%reading
- Input impedance: Selectable 1kΩ/1MΩ
- Display: LCD 240x128 dots + backlight
- Memory: 2000 locations
- Communication interface: RS-232/USB
- Power supply: 6x1.2V rechargeable batteries type AA
- Pollution level: 2
- Mechanical protection: IP40
- Size (LxWxH): 230x115x103mm
- Weight: 1.3kg

Included accessories

	Power supply cable of power unit
PC55SND	Metal plate (200x100mm), 2 pieces
	Current metal probe
	Voltage metal probe
PC55REL	Cable 10mm² with winder and alligator clip, 50m
	Cable 10mm² with alligator clip, 10m
PC55MBK	Black measuring cable, 3m, with industrial plugs, 2 pcs.
PC55GRE	Green measuring cable, 10m
PC55BLK	Black measuring cable, 1.5m
PC55RED	Red measuring cable, 50m
PC55MRE	Red connection cable with alligator clip, 1m
5004-IECN	Alligator clip, 4 pieces
	Cable RS-232
C2007	USB cable
	Soft transport bag, 2 pieces
	Strap for slinging the device over one's shoulder
	6 x 1.2V rechargeable batteries NiMH type AA
	External power supply
TERAVIEW	Windows software on CD-ROM
	User manual and ISO9000 calibration certificate

Optional accessories

PC55MBK	Black measuring cable, 3m, with industrial plugs, 2 pcs.
	For further information on optional accessories, please contact HT.

INSULATION AND CONTINUITY MEASURING DEVICES

INSULATION AND CONTINUITY MEASURING DEVICES

NEW

MAIN MEASUREMENTS	HT7052	HT7051	NEPTUNE	ISO410	M72	M70
	INSULATION/CONTINUITY					
TRMS	-	-	•	-	•	-
DC test voltage measuring range	500V ÷ 10kV	100V ÷ 5kV	50,100,250, 500,1000V	50,100,250, 500,1000V	250 / 500V	250, 500,1000V
Insulation resistance measuring range	120kΩ ÷ 10TΩ	0.01MΩ ÷ 9.99TΩ	0.01MΩ ÷ 1999MΩ	0.01MΩ ÷ 1999MΩ	0.00MΩ ÷ 999MΩ	0.001MΩ ÷ 4000MΩ
Dielectric strength in DC	•	-	-	-	-	-
Continuity of protective conductors with 200mA	-	-	•	•	•	•
Continuity 10A	-	-	-	-	-	-
ADDITIONAL FUNCTIONS						
Test with programmable ramp	• steps of 25VDC	• steps of 25VDC	-	-	-	-
Programmable test timer	• 1s ÷ 30min	• 5s ÷ 100min	• 15s ÷ 10min	• 10s ÷ 16,6min	-	• 2s ÷ 1min
Setting of measurement limit value	•	•	•	•	-	-
Measurement of polarization index P.I.	•	•	•	-	-	-
Measurement of dielectric absorption ratio D.A.R.	•	•	•	-	-	-
Measurement of dielectric discharge ratio D.D.	•	•	•	-	-	-
Measurement of discharge capacity	•	•	-	-	-	-
Automatic discharge of target	•	•	•	•	•	•
Measurement of DC/AC voltage up to 600V	• 600V	• 600V	• 1000V	-	• 600V	• 600V
Measurement of resistance and continuity with buzzer	-	-	•	-	•	•
Measurement of phase sequence	-	-	•	-	•	-
ADDITIONAL CHARACTERISTICS						
Measurement category	CAT IV 600V	CAT IV 600V	CAT IV 600V	CAT III 265V	CAT III 550V	CAT III 550V
Backlight	•	•	•	•	-	•
Autocalibration of measuring leads	-	-	•	•	•	•
Guard terminal	•	•	-	-	-	-
Measurements with remote terminal	-	-	-	•	-	-
Internal memory	•	•	-	•	-	-
Recalling on the display the saved results	•	•	-	•	-	-
RS232/optical/USB interface for transferring data onto the PC	•	•	-	•	-	-
Power supply with rechargeable battery from mains	•	•	-	-	-	-
AutoPowerOFF	-	•	•	•	•	•
Power supply	6x 1.2V NiMH LR20	Rechargeable NiMH	4x 1.5V AAA	6x 1.5V type AA	4x 1.5V AA	4x 1.5V AA
Size in mm (LxWxH)	360 x 330 x 160	360 x 310 x 195	175 x 85x 55	222 x 162 x 57	240 x 100 x 45	240 x 100 x 45
Weight (batteries included)	5.5kg	3.5kg	4.20 kg	1kg	450g	450g
Safety	IEC/EN61010-1 IEC/EN61557-2	IEC/EN61010-1 IEC/EN61557-1-2	IEC/EN61010-1 IEC/EN61557-1-2	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Order code	**HV007052**	**HV007051**	**HR00NEPK**	**HV000410**	**HV000072**	**HV000070**

CAT IV 600V

ORDER CODE ***HV007052***

HT7052

PROFESSIONAL INSULATION METER
WITH TEST VOLTAGE UP TO 10KV DC

HT7052 has been developed to measure **insulation resistance** with test voltage **programmable** up to **10kVDC** and **measuring range up to 10TΩ** which makes it very useful in any industrial application (tests on electric machines, power transformers, electric cables, electric boards, generic devices, etc.). The device allows measuring parameters such as **Polarization Index (PI)** and **Dielectric Absorption Ratio (DAR)** and **Dielectric Discharge (DD)**, diagnostic tests which allow determining the quality of an insulating material. It carries out **"ramp"** insulation tests and **dielectric strength test in DC**. HT7052 is supplied with NiMH rechargeable battery with integrated battery charger, which allows for a remarkable duration when carrying out measurements, it is provided with **internal memory** for saving measurements and it is also possible to connect it to the PC to download the measured results. The device has been inserted into a comfortable and resistant transport case, solid and safe for "on-site" use.

Functions and characteristics

- Insulation with test voltage from 500 to 10kVDC in steps of 25VDC
- Measuring range up to 10TΩ
- Timer programmable from 1s to 30min
- Diagnostic tests on materials (PI, DAR, DD)
- Insulation resistance with programmable "ramp"
- Dielectric strength up to 10kVDC
- Measurement of DC/AC voltage up to 600V
- Measurement of capacity of the target
- GUARD terminal for surface current compensation
- Automatic discharge of test object
- **Backlight display**
- **Internal memory for saving results**
- **Recalling on the display the saved results**
- **RS-232 and USB serial interface for transferring data onto the PC**
- **Power supply with rechargeable battery from power**
- **Display: Custom LCD with backlight and bargraph**
- **External power supply: 90-260V AC, 45-65Hz, 70VA**
- **Internal power supply: rechargeable batteries**
- **Duration: 4 hours (test with 10kV)**
- **Internal memory: 1000 locations**
- **PC interface: RS232 and USB**
- **Insulation: double insulation**
- **Pollution level: 2**
- **Mechanical protection: IP53 (closed case)**
- **Measurement category: CAT IV 600V**
- **Size (LxWxH) and weight: 330x360x160mm, 5.5kg**

Included accessories

	Red terminal, protection 10kV, 2m
	Terminals (red/black), protection 10kV, 2m, 2 pieces
	Terminals (red/black), protection 10kV, 2 pieces
	Green guard terminal
5004-IECV	Green alligator clip
	Power supply cable
	USB cable
	Cable RS-232
	Software "TeraView" on CD-ROM
	6 x 1.2V rechargeable batteries NiMH IEC LR20
	User Manual
	ISO9000 calibration certificate

Optional accessories

For further information on optional accessories, please contact HT.

CAT IV 600V

ORDER CODE ***HV007051***

HT7051

PROFESSIONAL INSULATION METER
WITH PROGRAMMABLE TEST VOLTAGE
UP TO 5KV

HT7051 has been developed to measure **insulation resistance** with test voltage **programmable up to 5kVDC** and measuring range up to **10TΩ** which makes it very useful in any industrial application (tests on electric machines, power transformers, electric cables, electric boards, generic devices, etc.). The device allows carrying out tests in **FIX** (with fixed test voltages), **ADJUST** (programmable test voltage) and **RAMP** mode (**programmable test voltage and application time with selection of 3 available ramp types**) which define a kind of operation suitable for any situation.
Measurement of parameters such as **Polarization Index (PI)** and **Dielectric Absorption Ratio (DAR)**, are duration tests which allow defining the quality of insulation. HT7051 is supplied with **NiMH rechargeable battery** with integrated battery charger, which allows for a remarkable duration when carrying out measurements, it is provided with **internal memory** for saving measurements and it is also possible to connect it to the PC to download the measured results. The whole structure has been inserted into a comfortable and resistant transport case, solid and safe for "on-site" use.

Functions and characteristics

- Insulation with test voltage from 100V to 5kVDC
- Measuring range up to 10TΩ
- Measurement with fixed test voltages
- 3 test ramps, programmable in time and voltage
- SMOOTH function for steady measurement results
- Measurement of dielectric discharge current
- Measurement of polarization index (P.I.)
- Measurement of dielectric absorption ratio (D.A.R.)
- Measurement of discharge capacity
- DC/AC TRMS voltage up to 600V
- Rechargeable internal NiMH battery
- GUARD terminal
- Automatic discharge of the test object
- **Display: Custom LCD with backlight and bargraph**
- **External supply: power 220-240V, 50/60Hz, 20VA**
- **Internal supply: rechargeable internal NiMH battery**
- **Protection fuse: T 200mA H 250V**
- **Battery life: >1000 tests (@ 5kV on 5MΩ)**
- **AutoPowerOFF: after 5 minutes' idling**
- **Internal memory: 700 locations**
- **Serial interface: RS-232 optically insulated**
- **Safety: IEC/EN61010-1, IEC/EN61557-1**
- **Insulation: double insulation**
- **Pollution level: 2**
- **Mechanical protection: IP53 (closed case)**
- **Measurement category: CAT IV 600 (to earth),**
- **Size (LxWxH) and weight: 360x310x195 mm, approx. 3.5kg**

Included accessories

KIT14000	Set of 3 cables with alligator clips + 2 cables with leads
C7051	Power supply cable Europlug-Schuko with no earthing
BORSA2000	Transport bag for accessories
TOPVIEW	Windows software for PC + cable RS-232
	ISO9000 calibration certificate
	User Manual

Optional accessories

C2009	RS232-USB adapter

CAT IV 600V

LoZ

TRMS AC+DC

autoRange

1000V

MΩ

ORDER CODE ***HR000NEP***

NEPTUNE

PROFESSIONAL DEVICE
FOR ELECTRIC SAFETY TESTS ACCORDING TO IEC/EN61557-1
AND ADVANCED MUTLIMETER FUNCTIONS

NEPTUNE is an innovative device which, further to being used as powerful multimeter for **TRMS** measurements, allows performing electric safety tests (Insulation and continuity) according to standard IEC/EN61557-1. The device complies to CAT IV 600V, with autorange function and backlit display. The design is extremely modern, attractive and ergonomic to offer the best possible ease of use.

Functions and characteristics

Multimeter section

- DC / AC, AC+DC TRMS voltage
- Input of low-impedance voltage
- DC / AC / AC+DC TRMS current with optional standard clamp transducer
- AC TRMS current up to 3000A with flexible clamp transducer F3000U
- Automatic recognition of AC and DC quantities
- Resistance and continuity test with buzzer
- Current and voltage frequency
- MAX/MIN/PEAK/HOLD functions
- 9999 measuring spots
- Auto-Power-Off function
- Bargraph function

Electric verification section

- Phase sequence with 1 terminal
- Insulation with test voltage 50, 100, 250, 500, 1000V with PI and DAR calculation
- Continuity of protective conductors with 200mA

Section Mains analysis

- Inrush current (Dynamic INRUSH - DIRC)
- Current/voltage harmonics up to the 25th and THD% calculation

Included accessories

4324-2	Pair of test tips Red/Black 2/4mm straight banana
YABAT0001HT0	Alkaline battery 1.5V, type AAA, IEC LR03, 4 pcs
YABRS0002HT0	Carrying bag
YAMUM0066HT0	User manual on CD-ROM
YAMUM0065HT0	Quick reference guide
	Calibration certificate ISO9000

Optional accessories

606-IECN	Connector with magnetic terminal
F3000U	AC flexible clamp with 30/300/3000A full scales
HT96U*	AC current clamp with 1/100/1000A full scales
HT97U*	AC current clamp with 10/100/1000A AC full scales
HT98U*	DC current clamp with 1000A full scale
HT4006	AC/DC current clamp with 40/400A full scales
NOCANBA	Hypertac-to-banana adapter
5004-IECR	Red alligator clip
5004-IECN	Black alligator clip
C2065	3-wire cable Red, Black and Green with Schuko plug

The standard accessories can be different depend on countries.
* Adapter NOCANBA required.

CAT III 265V

ORDER CODE ***HV000410***

ISO410

MULTIFUNCTION DEVICE FOR MEASURING
INSULATION AND CONTINUITY
OF PROTECTIVE CONDUCTORS

ISO410 has been developed to measure **Insulation up to 1000VDC** and **Continuity of protective and equipotential conductors with 200mA**. This device is **very easy to use** and has an innovative structure with no mechanical commuters, which makes it extremely solid and resistant. It allows activating measurements by means of a **remote switch probe** (optional accessory **PR400**), very comfortable when carrying out measurements in a sequence. The context **help on line**, selectable by the user and active for any function, is a useful aid when connecting the device to the system to be tested.
The **internal memory** allows saving the measurements carried out in order to subsequently **transfer them onto the PC** through the serial connection. Each measurement is saved together with all its sub-results and test parameters, as well as with two identifiers (which can be set by the user) in order to better identify the spot in which measurement was carried out.

Functions and characteristics

- Continuity of protective conductors with 200mA
- Insulation with 50, 100, 250, 500, 1000VDC
- Insulation measuring range 0.01MΩ-2GΩ
- Automatic discharge of measured object
- Autocalibration of measuring leads
- Setting the limit on measurement
- 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**
- **Measurement category CAT III 265V**
- **Power supply 6 x 1.5V batt. type AA**
- **Size (LxWxH): 222x162x57mm**
- **Weight (batteries included): 1kg**

Included accessories

UNIVERSALKITCOMBI	Set of 3 cables + 3 alligator clips + 3 leads
BORSA75	Soft carrying bag
	ISO9000 calibration certificate
	User manual on CD-ROM
	Quick user guide

Optional accessories

TOPVIEW2006	Windows software for PC + optical/USB C2006 cable
VA500	Rigid transport case for device and accessories
PR400	Remote lead for test activation
SP-0400	Set of straps for slinging the instrument over one's shoulder

CAT II 550V

TRMS

ORDER CODE ***HV000072***

M72

COMBINED DEVICE FOR INSULATION MEASUREMENT, CONTINUITY OF PROTECTIVE CONDUCTORS AND MULTIMETER FUNCTION

M72 is mainly dedicated to measuring **Insulation resistance** and **Continuity of protective and equipotential conductors with 200mA** in electric installations, typically domestic. Further to these measurements, M72 has many **additional functions** such as **measurement of phase sequence with 1 terminal**, measurement of **leakage currents** with optional clamp transducer and a powerful **multimeter** function for measuring **voltage and current** in true root mean square value **(TRMS)**.

Functions and characteristics

- Continuity of protective conductors with 200mA
- Insulation with 250,500VDC
- Insulation measuring range 0.01MΩ-2GΩ
- Automatic discharge of measured object
- Autocalibration of measuring leads
- Phase sequence
- 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: CAT III 550V**
- **Power supply: 4x1.5V batt. type AA**
- **Size (LxWxH): 240x100x45 mm**
- **Weight (batteries included): 450g**

Included accessories

KIT0075	Set of 2 cables with leads + 2 alligator clips
BORSA2000	Soft Soft carrying bag
	ISO9000 calibration certificate
	User manual on CD-ROM
	Quick user guide

Optional accessories

HT96U	Standard 1-100-1000A/1V clamp, diameter 54mm
HT4003	Standard 400A AC clamp
HT4004N	Standard 10-100A DC/1V clamp
HT4005N	Standard 5-100A AC/1V clamp
NOCANBA	Adapter for connect. HT96U, HT4004N, HT4005N

CAT III 550V

ORDER CODE ***HV000070***

M70

COMBINED DEVICE FOR MEASURING INSULATION AND CONTINUITY OF PROTECTIVE AND EQUIPOTENTIAL CONDUCTORS

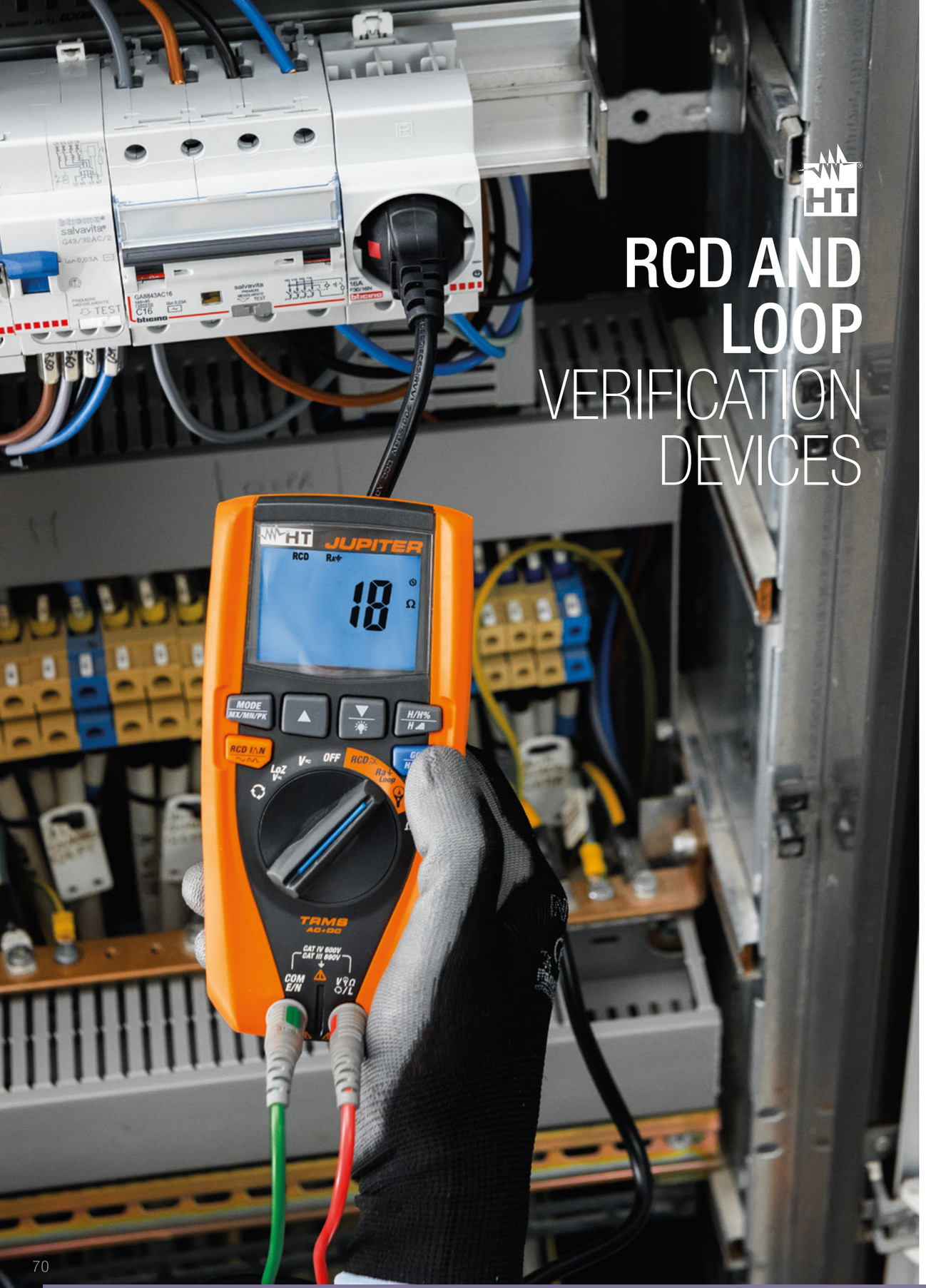
M70 is a mobile device dedicated to measuring **Insulation resistance with test voltage up to 1000VDC** and **Continuity of protective and equipotential conductors with current of 200mA** in domestic and industrial electric installations.
Thanks to the **LOCK function**, insulation measurement can be carried out in a **continuous manner over time**, thus testing the insulation of the target with a **duration test**.
It carries out measurement with a timer, **programmable from 2 to 60s**.

Functions and characteristics

- Insulation with test voltage 250, 500, 1000VDC
- Measuring range up to 4GΩ
- Automatic discharge of measured object
- LOCK function for measurements in a continuous mode
- Insulation with timer programmable from 2 to 60s
- Continuity of protective conductors with 200mA
- Autocalibration of measuring leads
- AC/DC voltage up to 600V
- Resistance and continuity test with buzzer
- Wide display with backlight
- AutoPowerOFF
- **Display with backlight: LCD, 4 digits, 10000 dots**
- **Power supply: 4x1.5V batteries type AA**
- **AutoPowerOFF: after 15 minutes' idling**
- **Safety: IEC/EN61010-1**
- **Measurement category: CAT III 550V**
- **Size (LxWxH): 240x100x45 mm**
- **Weight (batteries included): 450g**

Included accessories

KIT0070	Set of 2 cables + 2 alligator clips + 1 lead
BORSA2000	Soft carrying bag
	Batteries
	CE declaration of conformity
	User Manual



RCD AND LOOP VERIFICATION DEVICES

NEW

JUPITER

SPEED418

M73

MAIN MEASUREMENTS	**LOOP/RCD**		
TRMS	•	•	•
Measuring range of verifiable RCD rated currents	30,100,300mA	10,30,100,300,500,650,1000mA	30,30x5,100,300mA
Tripping time of type A, AC General and Selective RCDs	• Only general	• Up to 1A	• A = 30mA AC = 300mA Only general
Ramp test for tripping current of RCDs type A, AC Standard	• Only 30mA only Standard	• Up to 650mA	• A = 30mA AC = 30mA Only general
Overall earth resistance with no residual current protection tripping	•	•	•
Loop/Line impedance, Phase-Phase, Phase-Neutral, Phase-PE	•	•	-
Loop/Line impedance Phase-Phase Phase-Neutral, Phase-PE with high resolution (0.1mΩ)	-	•*	-
Contact voltage	•	•	•
Leakage current with optional clamp	•	-	•
ADDITIONAL FUNCTIONS			
DC/AC TRMS voltage and current	• AC+DC, LoZ function	-	•
Phase sequence	•	•	•
Frequency	•	-	•
Resistance	•	-	•
Continuity with buzzer	•	-	•
Data HOLD, MAX/MIN/AVG	• MAX/MIN	-	•
Measurement of voltage and current PEAK	•	-	•
Measurement of Voltage/Current harmonics + THD%	•	-	-
ADDITIONAL CHARACTERISTICS			
Measurement category	CAT IV 600V CAT III 690V	CAT III 265V	CAT III 550V
AUTOMATIC Test	-	•	-
Test with remote lead	-	•	-
Help on line on the display	-	•	-
Internal memory	-	•	-
Optical/USB serial port for PC connection	-	•	-
Size (LxWxH) (mm)	175x85x55	222x162x57	240x100x45
Weight (batteries included)	420g	1kg	450g
Reference standard for safety	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Order code	**HR00JUPI**	**HV000418**	**HV000073**

* With optional accessory IMP57.

CAT IV 600V

LoZ

TRMS AC+DC

autoRange

690V

H/H% HARMONICS

THD%

ms mA

ORDER CODE ***HR00JUPI***

JUPITER

PROFESSIONAL DEVICE
FOR ELECTRIC SAFETY TESTS ACCORDING TO IEC/EN61557-1
AND ADVANCED MUTLIMETER FUNCTIONS

The new model JUPITER is an innovative device which, further to being used as **powerful multimeter** for TRMS measurements, allows performing **electric safety tests (RCD, Ra, Loop)** according to **standard IEC/EN61557-1**.
The device complies to CAT IV at 600V, with **autorange** function available on all models and possibility of backlit display. The design is extremely modern, attractive and ergonomic to offer the best possible ease of use.

Functions and characteristics

Multimeter section

- DC / AC, AC+DC TRMS voltage
- DC / AC / AC+DC TRMS voltage with low impedance (LoZ)
- DC / AC / AC+DC TRMS current with with standard clamp transducer
- AC TRMS current up to 3000A with flexible clamp transducer F3000U
- Automatic recognition of AC and DC quantities
- Resistance and continuity test with buzzer
- Current and voltage frequency
- MAX/MIN/PEAK/HOLD functions
- 9999 measuring spots
- Auto-Power-Off function
- Bargraph function

Electric verification section

- Overall earth resistance L-PE without RCD tripping
- Loop impedance L-L, L-N and calculation of assumed short-circuit current
- Measurement of tripping time on General RCDs type A and AC (30mA,100mA, 300mA)
- Measurement of tripping current on General RCDs type A and AC (30mA)
- Phase sequence with 1 terminal

Section Mains analysis

- Inrush current (Dynamic INRUSH - DIRC)
- Current/voltage harmonics up to the 25th and THD% calculation

Included accessories

C2065	Three-wire cable Red, Black, Green with Schuko plug
4324-2	Pair of test tips Red/Black 2/4mm straight banana
YABAT0001HT0	Alkaline battery 1.5V, type AAA, IEC LR03, 4 pcs
YABRS0002HT0	Carrying bag
YAMUM0066HT0	User manual on CD-ROM
YAMUM0065HT0	Quick reference guide
	Calibration certificate ISO9000

Optional accessories

C2009	RS232-USB adapter
606-IECN	Connector with magnetic terminal
F3000U	AC flexible clamp with 30/300/3000A full scales
HT96U*	AC current clamp with 1/100/1000A full scales
HT97U*	AC current clamp with 10/100/1000A AC full scales
HT98U*	DC current clamp with 1000A full scale
HT4006	AC/DC current clamp with 40/400A full scales
NOCANBA	Hypertac-to-banana adapter
5004-IECR	Red alligator clip
5004-IECN	Black alligator clip

Standard accessories can be different depending on the country.
* Adapter NOCANBA required.

CAT III 265V

ORDER CODE ***HV000418***

SPEED418

MULTIFUNCTION DEVICE
FOR NON-TRIP EARTH RESISTANCE
MEASUREMENT AND RCD TESTS

SPEED418 has been specifically developed to measure **Non-trip earth resistance** directly at the outlets to be measured and for **operating tests of RCDs type A, AC General and Selective** with tests both in manual and **automatic** mode in domestic electric installations.
Extremely simple to use, with setting of parameters via scroll-through menu. It has no mechanical commuters and it is therefore more solid in structure.
The device is provided with an **internal memory** for saving measurements and with an optical/USB interface for transferring measured data onto the PC.
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**.

Functions and characteristics

- Tripping time of type A, AC General and Selective RCDs with test currents 10,30,100,300,500,650,1000mA
- Tripping current of type A, AC General RCDs 10,30,100,300,500,650mA
- Non-trip earth resistance
- Line/Loop impedance also with high resolution (0.1mΩ) with optional accessory IMP57
- Prospective short-circuit current
- Phase sequence
- 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**
- **Measurement category: CAT III 265V**
- **Power supply with batteries type AA: 6x1.5V**
- **Size (LxWxH): 222x162x57mm**
- **Weight (batteries included): 1kg**

Included accessories

C2033X	3-wire cable with Shuko plug
BORSA75	Soft carrying bag
	ISO9000 calibration certificate
	User manual on CD-ROM and Quick guide for use

Optional accessories

TOPVIEW2006	Windows software for PC + optical/USB cable
UNIVERSALKITCOMBI	Set of 3 cables + 3 alligator clips + 3 leads
IMP57	Accessory for measuring Loop impedance with high resolution
PR400	Remote lead for test activation
SP-0400	Set of straps for slinging the instrument over one's shoulder
VA500	Rigid transport case for device and accessories

CAT III 550V

TRMS

ORDER CODE ***HV000073***

M73

MULTIFUNCTION DEVICE
FOR NON-TRIP EARTH RESISTANCE
MEASUREMENT AND RCD TESTS

M73 has been developed for operators who mainly work on domestic installations.
M73 is very easy to use, it is very small in size and it carries out all necessary tests to establish COMPLIANCE (and hence ensure SAFETY) of a domestic electric system.
By always using it before starting working on an already existing system (which the operator therefore does not know well) and at the end of the job, this device 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.
M73 is also used to test the safety of electric system; it s therefore capable of measuring **Non-trip earth resistance**, carrying out **tests on RCDs type A and AC and measuring Insulation and Continuity**.
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**.

Functions and characteristics

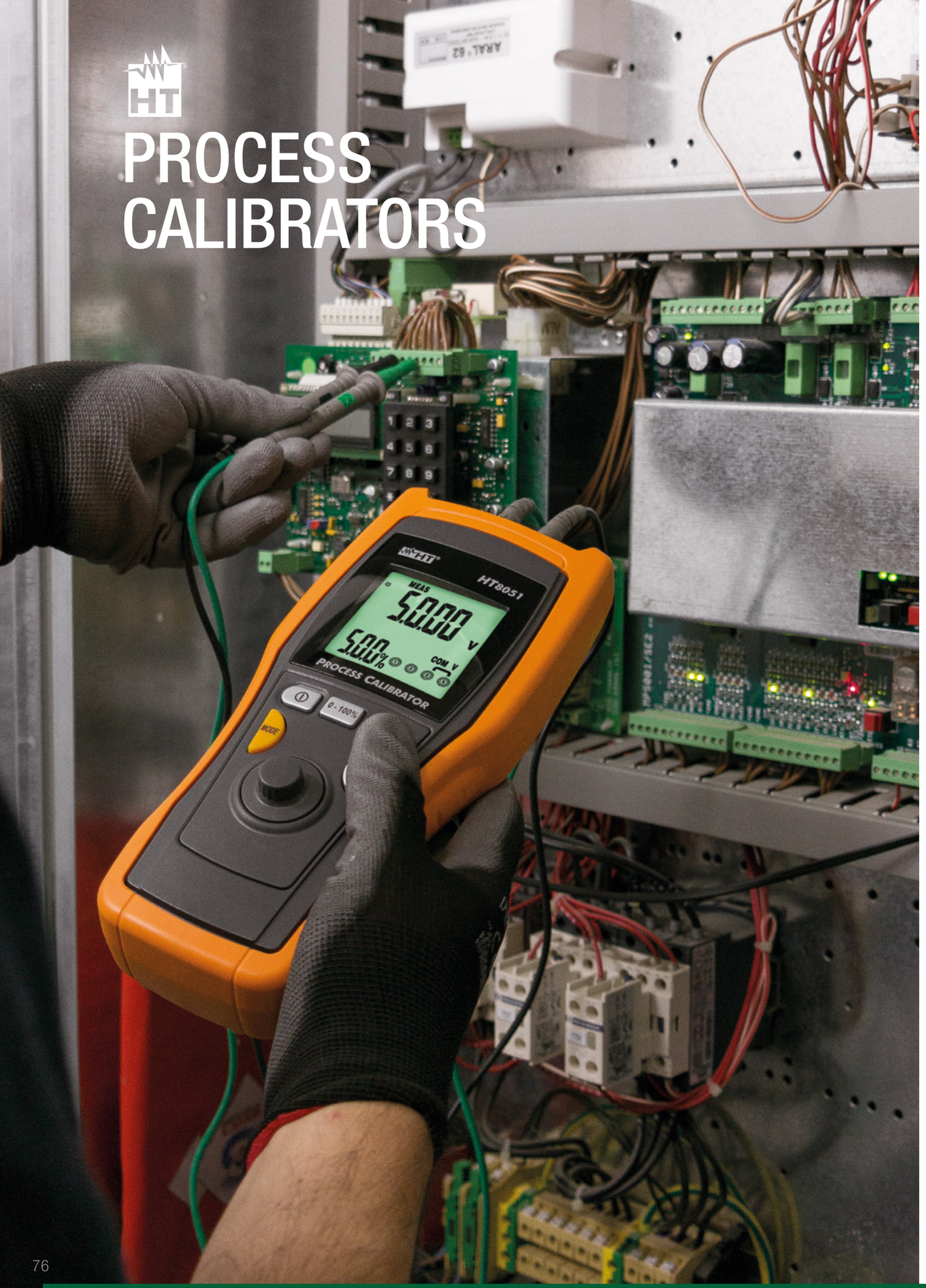
- Tripping time of type A, AC General RCDs with currents 30,30x5,100,300mA
- Tripping current of type A, AC General RCDs with 30mA test current
- Non-trip earth resistance
- Prospective short-circuit current
- Phase sequence
- DC/AC TRMS voltage
- DC/AC TRMS current
- Resistance and Continuity test
- 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: CAT III 550V**
- **Power supply with batteries type AA: 4x1.5V**
- **Size (LxWxH): 240x100x45mm**
- **Weight (batteries included): 450g**

Included accessories

KIT0075	Set of 2 cables with leads + 2 alligator clips
C2075	2-wire cable with Shuko plug
BORSA2000	Soft carrying bag
	ISO9000 calibration certificate
	User manual on CD-ROM
	Quick user guide

Optional accessories

HT96U	Standard 1-100-1000A/1V clamp, diameter 54mm
HT4003	Standard 400A AC clamp
HT4004N	Standard 10-100A DC/1V clamp
HT4005N	Standard 5-100A AC/1V clamp
NOCANBA	Adapter for connect. HT96U, HT4004N, HT4005N



PROCESS CALIBRATORS

PROCESS CALIBRATORS

CALIBRATION MEASUREMENTS	HT8051	HT8100
TRMS	•	•
DC 4-20mA current measurement	•	•
DC 0-10V voltage measurement	•	•
DC 4-20mA current generation	•	•
DC 0-10V voltage generation	•	-
Measurement of output current of transducers	•	•
Simulation of an external transducer	•	•
Loop supply with minimum voltage 24V	•	•
Generation of selectable ramp	•	•
Load of 250Ω for testing HART transducers	-	•
MULTIMETER MEASUREMENTS		
AC/DC voltage	• MAX 10VDC	•
AC+DC voltage	-	•
AC/DC current	• MAX 24mADC	• 1A
AC+DC current	-	•
Resistance and buzzer continuity	-	•
Frequency	-	•
Diode test	-	•
ADDITIONAL CHARACTERISTICS		
Measurement category	CAT IV 600V	CAT IV 600V
Measuring counts	-	50.000
Backlight	•	•
Autorange	-	•
Auto power off	•	•
Data HOLD function	-	•
MIN/MAX function	-	•
AVG function	-	•
Relative measurement	-	•
Internal memory	-	•
Power supply	1x7.4/8.4V 600mAh Li-ION	4x1.5V AA
Size (LxWxH) (mm)	195x92x55	207x95x52
Weight (batteries included)	400g	630g
Safety	IEC/EN61010-1	IEC/EN61010-1
Order code	**HV080510**	**HV008100**

ORDER CODE ***HV080510***

HT8051

PROFESSIONAL PROCESS CALIBRATOR

HT8051 is a professional **process calibrator** capable of **generating** and **measuring** DC **voltage** and **current signals** up to **10V** and **24mA** respectively, with a very simple setting of values thanks to the innovative adjuster. In measuring and generating current, it is also possible to define a **display, also in percentage format,** corresponding to the set values **(0% = 4mA, 100% = 20mA)**. The generation of voltage and current signals is also possible by using up to **3 selectable ramps**. This model also allows **measuring the current absorbed** by **external transducers** directly supplied by them and **simulating the presence of a transducer** with adjustable current in its whole measuring range. The device has been designed in compliance with **safety standard IEC/EN61010-1** with double protective insulation, and each function can be selected through the appropriate buttons found on the front panel. HT8051 is the ideal solution for typical industrial automation applications and for laboratory activities.

Functions

- Generation of voltage signal with amplitude up to 10VDC
- Measurement of voltage up to 10VDC
- Generation of current signal with amplitude up to 24mA DC
- Measurement of current up to 24mA DC
- Generation of voltage and current signals by means of 3 selectable ramps
- High-sensitivity adjustment selector
- Display of current as a percentage (4-20mA)
- Measurement of transducers output current (Loop)
- Simulation of an external transducer
- Shortcut function keys
- Powering with rechargeable Li-ION battery

DC voltage (generated and measured)

- Reading range: 0.01mV ÷ 10V
- Resolution: 0.01mV ÷ 0.001V
- Standard accuracy: ± (0.02% reading + 4digits)
- Protection: 30VDC

DC voltage (generated and measured)

- Reading range: 0.001mA ÷ 24mA
- Percentage: -25% ÷ 125%
- Resolution: 0.001mA
- Standard accuracy: ± (0.02% reading + 4digits)
- Protection: 30mADC

Output voltage and current ramps

- ⩓ (slow linear ramp): Goes from 0% →100% → 0% in 40s
- M (quick linear ramp): Goes from 0% →100% → 0% in 15s
- ⬏ (step ramp): Goes 0% →100% → 0% through steps of 25% with ramps of 5s

Main features

Display:	5 LCD + secondary display
Power supply:	1x7.4V rechargeable Li-ION battery
External battery charger:	230VAC/50Hz - 12VDC
Autonomy:	about 8 hours in generation (@ 12mA, 500Ω)
Auto Power OFF:	after 20 minutes (adjustable) of non-use
Safety:	IEC/EN61010-1
Insulation:	double insulation
Level of pollution:	2
Measurement category:	CAT I 30V
Dimensions (LxWxH):	195x92x55mm
Weight (battery included):	400g

Included accessories

KIT0075	Couple of leads, two crocodile clip terminals
	Protective cover
	Rechargeable battery, External battery charger
	User manual
	Hard case for transport

CAT IV 600V

CAT III 1000V

TRMS

ORDER CODE ***HV008100***

HT8100

PROFESSIONAL PROCESS CALIBRATOR/MULTIMETER

Model HT8100 is a professional device which groups measurements such as **TRMS multimeter** and function of **process calibrator** capable of **generating current signals DC 0-20mA** and **4-20mA**. As a digital multimeter, the device mainly carries out **AC/DC voltage** and **AC/DC current measurements**. In its function as a current generator (values can be displayed also in a percentage format) options 0-20mA and 4-20mA are available, with manual and automatic settings of **thresholds on the output signal**. This model also allows measuring the **current absorbed by** external **transducers directly powering them** and **simulating the presence of a transducer with adjustable current** in its whole measuring range. HT8100 is capable of saving the results of measurements in its **internal memory** and has been designed in compliance with **safety standard IEC/EN61010-1** in CAT III 1000V and **CAT IV 600V** with double protective insulation. Each function can be selected through the appropriate buttons found on the front panel. This device is the ideal solution for typical industrial automation applications.

Functions

- DC/AC TRMS voltage and current
- AC+DC measurements
- Automatic recognition of AC/DC signals
- Resistance, continuity test, diode test
- Frequency
- DC current generation up to 20mA DC
- Percentage display (0-20mA, 4-20mA)
- Measurement of output current of transducers (Loop)
- Simulation of an external transducer
- Input protective fuses
- Memory for measured data saving
- MAX/MIN/AVG, Data HOLD
- Relative measurement
- Automatic/Manual Range
- Auto Backlight, Auto Power OFF

Main features

Display:	LCD, 5 digits, 50000 dots
Power supply:	4x1.5V alkaline batteries type AA LR6
Battery life:	120 hours
Auto Power OFF:	after 20 minutes' idling
Safety:	IEC/EN61010-1
Measurement category:	CAT III 1000V, CAT IV 600V
Insulation:	double insulation
Pollution level:	2
Max height:	2000m
Size (LxWxH):	207x95x52mm
Weight (batteries included):	630g

Included accessories

YAAMK0000HT0	Pair of 4mm test leads
YAAMK0001HT0	Pair of alligator clips
	Belt with magnetic terminal
	Protective case, battery and user manual

Technical Specifications

DC voltage

- Measuring range: 0.001mV ÷ 1000V
- Resolution: 0.001mV ÷ 1.V
- Basic accuracy: ±(0.05%reading + 5 digits)
- Protection: 1000V DC/ACrms

AC TRMS voltage

- Measuring range: 0,001mV ÷ 1000V
- Resolution: 0.001mV ÷ 1.V
- Basic accuracy: ±(0.5%reading + 20 digits)
- Protection: 1000V DC/ACrms

DC current (measured)

- Measuring range: 0.001mA ÷ 1A
- Resolution: 0,001mA
- Basic accuracy: ±(0.05%reading + 5 digits)
- Protection: Fuse F440mA/1000V

DC current (generated)

- Measuring range: 0.000mA ÷ 20,000mA
- Resolution: 0.001mA
- Basic accuracy: ±0.002mA
- Protection: Fuse F440mA/1000V

AC TRMS current (measured)

- Measuring range: 0,001mA ÷ 1A
- Resolution: 0,001mA
- Basic accuracy: ±(1%reading + 20 digits)
- Protection: Fuse F440mA/1000V

Resistance and Continuity test

- Measuring range: 0.1Ω ÷ 50MΩ
- Resolution: 0.01Ω ÷ 1kΩ
- Basic accuracy: ±(0.2%reading + 10 digits)
- Continuity test:<30Ω
- Protection: 1000V DC/ACrms

Frequency

- Measuring range: 5Hz ÷ 100kHz
- Resolution: 0.01Hz ÷ 10Hz
- Basic accuracy: ±(3 digits)
- Protection: 1000V DC/ACrms

MULTIMETERS

PROFESSIONAL TRMS MULTIMETERS


HT64


HT63


HT62


HT61


HT60

NEW


JUPITER

NEW


NEPTUNE

NEW


MERCURY


FLASHMETER


IRONMETER


HT39


HT701


HT401


HT712

MAIN MEASUREMENTS	PROFESSIONAL TRMS MULTIMETERS							PROFESSIONAL TRMS MULTIMETERS							
TRMS	•	•	•	•	•	•		•	•	•	•	•	•	•	•
AC/DC voltage	• AC+DC	•	•	•	•	• AC+DC		• AC+DC	• AC+DC	•	•	•	•	• AC+DC	•
AC/DC voltage with low impedance (LoZ)	•	•	•	•	•	•		•	-	-	-	-	-	• AC	-
AC/DC current with external transducer	•	•	-	-	-	• Inrush		• Inrush	• AC+DC	-	-	-	-	-	-
AC/DC current with leads	• AC+DC	• AC+DC	•	•	-	-		-	•	-	•	•	•	• AC+DC	-
4-20mA% reading	•	•	-	-	-	-		-	-	-	-	-	-	-	-
Frequency	•	•	•	•	•	•		•	•	-	•	•	•	•	•
Resistance	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Continuity with buzzer	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Capacitance	•	•	•	-	•	-		-	•	-	•	•	•	•	-
Diode test	•	•	•	•	•	-		-	•	-	•	•	•	•	-
Duty Cycle (%)	•	•	•	•	•	-		-	•	-	•	•	-	-	-
Temperature with K-type probe	•	•	•	-	•	-		-	•	-	-	-	•	•	-
Insulation measurement (50,100,250,500,1000VDC)	-	-	-	-	-	-		•	-	-	-	-	•	-	-
Phase sequence and concordance	-	-	-	-	-	•		•	-	-	-	-	-	-	• + Conformity
Built-in LED torch	-	-	-	-	-	-		-	•		•	-	-	-	-
Test on A and AC general RCDs	-	-	-	-	-	•		-	-	-	-	-	-	-	-
L-L, L-N, L-PE, RA loop impedance	-	-	-	-	-	•		-	-	-	-	-	-	-	-
Voltage/Current harmonics + THD%	-	-	-	-	-	•		-	-	-	-	-	-	-	-
Continuity of protective conductors with 200mA	-	-	-	-	-	-		•	-	-	-	-	-	-	-

ADDITIONAL CHARACTERISTICS

Measurement category	CAT IV 600V	CAT IV 600V	CAT IV 600V	CAT IV 600V	CAT IV 600V	CAT IV 600V CAT III 690V		CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT IV 600V	CAT III 600V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT IV 600V
Measuring counts	6000	60.000	6000	6000	4000	9999		9999	6000	4000	4000	4000	10000	6000	4000
Backlight	•	•	•	•	•	•		•	•	•	•	•	•	•	-
IR sensor resolution	-	-	-	-	-	-		-	• *80 x 80 pxl*	-	-	-	-	-	-
Bluetooth	-	-	-	-	-	-		-	• *with APP HTMercury*	-	-	-	-	-	-
Bargraph	•	•	•	•	-	•		•	•	-	-	•	•	•	-
Autorange	•	•	•	•	•	•		•	•	-	•	•	•	•	•
Auto power off	•	•	•	•	•	•		•	•	•	•	•	•	•	•
Detection of AC voltage without contact	-	-	-	-	-	-		-	•	•	-	-	-	•	-
Data HOLD function	•	•	•	•	•	•		•	•	•	•	•	•	•	•
MIN/MAX/AVG functions	•	• MIN/MAX	• MIN/MAX	• MIN/MAX	-	• MIN/MAX		• MIN/MAX	• MIN/MAX	-	• MIN/MAX	• MIN/MAX	•	• MIN/MAX	-
PEAK function	• (1ms)	• (1ms)	-	-	-	• (1ms)		• (1ms)	•	-	-	•	-	•	-
Automatic recognition of AC/DC	-	-	-	-	-	•		•	-	•	-	-	-	-	•
Automatic recognition of internal functions	-	-	-	-	-	-		-	-	•	-	-	-	-	-
Relative measurement	•	•	•	•	•	-		-	•	-	-	•	•	-	-
Data logger and graph	•	-	-	-	-	-		-	•	-	-	• (through SW)	-	-	-
Memory for data saving	•	-	-	-	-	-		-	• (micro SD card)	-	-	-	•	-	-
Power supply	1x7.4V rechargeable Li-ION battery	4x 1.5V AAA	1x 9V 6F22	1x 9V 6F22	1x 9V 6F22	4x 1.5V AAA		4x 1.5V AAA	1x7.4V rechargeable Li-ION battery	2x 1.5V AAA	2x 1.5V AAA	1x 9V 6F22	4x 1.5V AA	1x 9V 6F22	2x 1.5V AAA
Size in mm (L x W x H)	175x85x55	175x85x55	175x85x55	175x85x55	175x85x55	175x85x55		175x85x55	190x75x55	135x75x40	120x85x45	164x82x44	207x95x52	190x94x48	250x51x30
Weight in grams	400	400	400	400	400	420		420	555	220	200	400	630	460	150
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	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Order code	**HR000010**	**HR000001**	**HR000002**	**HR000003**	**HR000004**	**HR00JUPI**		**HR00NEPK**	**HR000MER**	**HR000011**	**HR000005**	**HR000039**	**HR000701**	**HR000401**	**HR000712**

DIGITAL MULTIMETERS

NEW

HT211

NEW

HT21

NEW

HT25N

HT14D

HT12

HT10

HT8

HT7

HT6

MAIN MEASUREMENTS	DIGITAL MULTIMETERS				DIGITAL MULTIMETERS					
TRMS	•	-	-		-	-	-	-	-	-
AC/DC Voltage	•	•	•		•	•	•	•	•	•
AC Voltage with 1 terminal	-	-	-		-	-	•	•	•	•
AC Voltage with low impedance input	-	-	-		-	-	•	-	•	-
AC/DC Current	•	-	• DC		• DC	•	-	-	-	-
Frequency	•	•	-		-	•	-	-	-	-
Resistance	•	•	•		•	•	•	-	-	-
Continuity with buzzer	•	•	•		-	•	•	•	•	•
Capacitance	•	•	-		-	-	-	-	-	-
Diode test	•	•	•		•	-	-	•	-	•
Duty Cycle (%)	•	•	-		-	-	-	-	-	-
Temperature with K-type probe	•	-	-		-	-	-	-	-	-
Phase sequence and phase concordance	-	-	-		-	-	•	•	•	•
Built-in LED torch	-	-	-		-	-	•	•	•	•
ADDITIONAL CHARACTERISTICS										
Measurement category	CAT III 600V	CAT III 600V	CAT III 600V		CAT III 300V CAT II 600V	CAT III 300V CAT II 600V	CAT III 1000V CAT IV 600V	CAT IV 600V CAT III 690V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 690V
Measuring counts	4000	4000	2000		2000	3400	1999	6900	1999	LED indications
Backlight	•	•	•		-	-	•	-	•	-
Bargraph	-	-	-		-	•	-	-	•	-
Autorange	•	•	-		-	•	•	-	•	-
Auto power off	•	•	-		-	•	•	•	•	•
Data HOLD function	•	•	•		•	•	•	•	-	•
MIN/MAX function	•	-	-		-	-	-	-	-	-
PEAK function	-	-	-		-	-	-	-	-	-
Relative measurement	-	•	-		-	-	-	-	-	-
Power supply	2x 1.5V AAA	1x 9V 6F22	1x 9V 6F22		1x 12V MS21/MN21	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AA	2x 1.5V AAA	2x 1.5V AA
Size in mm (L x W x H)	138x68x37	138x68x37	150x70x48		105x50x25	128x87x24	270x70x30	255x60x35	240x78x40	255x60x35
Weight in grams	235	210	255		100	210	290	170	240	170
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/EN61243-3:2014	IEC/EN61010-1
Order code	**HR000211**	**HR000021**	**HR00025N**		**HR00014D**	**HR000012**	**HR000100**	**HR000008**	**HR000007**	**HR000006**

CAT IV 600V | LoZ | TRMS

ORDER CODE ***HR000010*** | ***HR000001*** | ***HR000002*** | ***HR000003*** | ***HR000004***

HT64 | HT63 | HT62 | HT61 | HT60

SERIES OF TRMS / CAT IV
PROFESSIONAL DIGITAL MULTIMETERS
WITH DATA LOGGER FUNCTIONS (HT64)

The new series of HT professional multimeters is the result of an important research conducted at the most demanding users of this kind of equipment, namely laboratories where the choice of a measuring instrument is subject to strict tests concerning **precision, reliability and safety of measurements even in extreme conditions**.
Therefore, a complete range multimeters, all able to measure in **TRMS**, all within **CAT IV 600V**, **autorange** function available on all models, with backlight display. The design is extremely modern and attractive, but also **ergonomic**, to ensure **maximum ease of use**. **Display with high resolution**, even in **color version**, for the premium model **HT64**.
In the summary table you can find all the features that make this innovative set of professional instruments unique and valuable.

Functions

	HT64	***HT63***	***HT62***	***HT61***	***HT60***
TRMS Measurements	•	•	•	•	•
Color display	•	-	-	-	-
AC/DC Voltage	• AC+DC	•	•	•	•
AC/DC Current	•	•	-	-	-
LoZ voltage measurement	•	•	•	•	•
Resistance/Continuity Test	•	•	•	•	-
Frequency	•	•	•	•	•
Capacity	•	•	•	•	•
Duty cycle	•	•	•	-	•
Diode test	•	•	•	•	•
Temperature probe type K	•	•	•	•	•
Reading 4-20mA%	•	•	•	-	•
Lettura 4-20mA%	•	•	-	-	-
Data HOLD	•	•	•	•	•
MAX/MIN/AVG	•	• Max/Min	• Max/Min	• Max/Min	-
PEAK	• 1ms	• 1ms	-	-	-
Relative Measurement	•	•	•	•	•
Autorange	•	•	•	•	•
Backlight	•	•	•	•	•
Bargraph	•	•	•	•	-
Data loggers and graph	•	-	-	-	-
Internal memory	•	-	-	-	-
Auto Power OFF	•	•	•	•	•

Main features

Display:	4 digit LCD, 4000 pixels ***(HT60)***
	4½ digit LCD, 6000 pixels ***(HT61, HT62)***
	4½ digit LCD, 60000 pixels ***(HT63)***
	Color 4 4½ digit TFT, 6000 pixels ***(HT64)***
Power supply:	1x9v battery type 6F22 ***(HT60, HT61, HT62)***
	4x1.5 V batteries type AAA LR03 ***(HT63)***
	1x7.4V rechargeable Li-ION battery ***(HT64)***
Auto Power OFF:	after 30 minutes of non-use ***(HT60)***
	after 15 minutes of non-use ***(HT61, HT62, HT63)***
	5min ÷ 60 min of non-use ***(HT64)***
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V - CAT III 1000V
Level of pollution:	2
Max operating altitude:	2000m
Dimensions (LxWxH):	175x85x55mm
Weight (batteries included):	about 400 g

Included accessories

4324-2	Pair of test leads with 2/4mm tip
TK101	Type K wire probe ***(HT60, HT62, HT63, HT64)***
T10	Type K Probe adapter
A64	Power supply + adapter ***(HT64)***
Calibration certificate ISO 9000 ***(HT61, HT62, HT63, HT64)***	
	Batteries, user manual and transport bag

Technical specifications

	HT64	***HT63***	***HT62***	***HT61***	***HT60***
DC Voltage					
Reading range:	0.1mV ÷ 1000V	0.1mV ÷ 1000V	0.1mV ÷ 1000V	0.1mV ÷ 1000V	1mV ÷ 600V
Standard accuracy:	±(0.1%reading+5digits)	±(0.9%reading+5digits)	±(1.0%reading+2digits)	±(1.0%reading+2digits)	±(1.2%reading+2digits)
AC Voltage					
Reading range:	0.1mV ÷ 1000V	0.1mV ÷ 1000V	1mV ÷ 1000V	1mV ÷ 1000V	1mV ÷ 600V
Standard accuracy:	±(0.9%reading+5digits)	±(1.0%reading+5digits)	±(1.0%reading+8digits)	±(1.0%reading+8digits)	±(1.2%reading+4digits)
DC Current					
Reading range:	0.1µA ÷ 10A	0.1µA ÷ 10A	0.1µA ÷ 10A	0.1µA ÷ 10A	-
Standard accuracy:	±(0.9%reading+5digits)	±(1.5%reading+5digits)	±(1.0%reading+3digits)	±(1.0%reading+3digits)	-
AC Current					
Reading range:	0.1µA ÷ 10A	0.1µA ÷ 10A	0.1µA ÷ 10A	0.1µA ÷ 10A	-
Standard accuracy:	±(1.2%reading+5digits)	±(2.5%reading+5digits)	±(1.5%reading+3digits)	±(1.5%reading+3digits)	-
Resistance and continuity test					
Reading range:	0.1Ω ÷ 60MΩ	0.1Ω ÷ 60MΩ	0.1Ω ÷ 60MΩ	0.1Ω ÷ 60MΩ	0.1Ω ÷ 40MΩ
Standard accuracy:	±(0.8%reading+5digits)	±(1.2%reading+5digits)	±(1.0%reading+4digits)	±(1.0%reading+4digits)	±(1.0%reading+2digits)
Buzzer:	<25Ω	<35Ω	<100Ω	<100Ω	<30Ω
Frequency					
Reading range:	0.001Hz ÷ 1MHz	0.001Hz ÷ 1MHz	0.001Hz ÷ 1MHz	0.001Hz ÷ 1MHz	0.001Hz ÷ 10MHz
Standard accuracy:	±(0.09%reading+5digits)	±(1.0%reading+2digits)	±(0.1%reading+1digit)	±(0.1%reading+2digits)	±(1.2%reading+3digits)
Capacity					
Reading range:	0.01nF ÷ 6mF	0.01nF ÷ 6mF	0.01nF ÷ 1000µF	-	0.01nF ÷ 100µF
Standard accuracy:	±(1.2%reading+8digits)	±(2.5%reading+10digits)	±(3.5%reading+4digits)	-	±(3.0%reading+5digits)
Duty Cycle					
Reading range:	0.1% ÷ 99.9%	20% ÷ 80%	0.1% ÷ 99.9%	0.1% ÷ 99.9%	0.5% ÷ 99.9%
Standard accuracy:	±(1.2%reading+2digits)	±(1.0%reading+5digits)	±(1.2%reading+2digits)	±(1.2%reading+2digits)	±(1.2%reading+2digits)
Temperature probe type K					
Reading range:	-40°C ÷ 1350°C	-40°C ÷ 760°C	-45°C ÷ 750°C	-	-20°C ÷ 760°C
Standard accuracy:	±(1.0%reading + 3°C)	±(2.0%reading + 3°C)	±(3.5%reading + 5°C)	-	±(3.0%reading + 5°C)

PROFESSIONAL
TRMS
MULTIMETERS

CAT IV 600V

LoZ

TRMS AC+DC

autoRange

1000V

H/H% HARMONICS

THD%

MΩ

ORDER CODE ***HR00JUPI*** | ***HR000NEP***

JUPITER NEPTUNE

PROFESSIONAL DEVICE
FOR ELECTRIC SAFETY VERIFICATIONS
ACCORDING TO IEC/EN61557-1 WITH ADVANCED
MULTIMETER FUNCTIONS

The new models **JUPITER** and **NEPTUNE** are **innovative** devices which, further to being used as powerful multimeters for **TRMS** measurements, allow performing electric safety tests (**RCD, Ra, Loop, Insulation** and **Continuity**) according to standard **IEC/EN61557-1**. They comply to **CAT IV 600V**, with **autorange** function available in all models, as well as the **backlit display**. The design is extremely modern, attractive and ergonomic to offer the best possible ease of use.

Functions and characteristics

	JUPITER	***NEPTUNE***
Multimeter section		
DC / AC, AC+DC TRMS voltage	•	•
DC / AC / AC+DC TRMS voltage with low impedance (LoZ)	•	•
AC TRMS current up to 3000A with optional flexible clamp transducer F3000U	•	•
Automatic recognition of AC and DC quantities	•	•
Inrush current (Dynamic INRUSH - DIRC)	•	•
Current/voltage harmonics up to the 25th and THD% calculation	•	•
Resistance and continuity with buzzer	•	•
Current and voltage frequency	•	•
MAX/MIN/PEAK/HOLD functions	•	•
9999 measuring spots	•	•
Auto-Power-Off function	•	•
Bargraph function	•	•
Funzione bargraph	•	•
Electric verification section		
Overall earth resistance L-PE without RCD tripping	•	-
Loop impedance L-L, L-N and calculation of assumed short-circuit current	•	-
Measurement of tripping time on General RCDs type A and AC (30mA,100mA, 300mA)	•	-
Measurement of tripping current on General RCDs type A and AC (30mA)	•	-
Phase sequence with 1 terminal	•	•
Insulation with test voltage 50, 100, 250, 500, 1000V with PI and DAR calculation	-	•
Continuity of protective conductors with 200mA	-	•

Included accessories

C2065	Three wire cable Red, Black, Green with Schuko plug ***(JUPITER)***
4324-2	Pair of test tips Red/Black 2/4mm straight banana
YABAT0001HT0	Alkaline battery 1.5V, type AAA, IEC LR03, 4 pcs
YABRS0002HT0	Carrying bag
YAMUM0066HT0	User manual on CD-ROM
YAMUM0065HT0	Quick reference guide
	Calibration certificate ISO9000

Optional accessories

606-IECN	Connector with magnetic terminal
F3000U	AC flexible clamp with 30/300/3000A full scales
HT96U*	AC current clamp with 1/100/1000A full scales
HT97U*	AC current clamp with 10/100/1000A AC full scales
HT98U*	DC current clamp with 1000A full scale
HT4006	AC/DC current clamp with 40/400A full scales
NOCANBA	Hypertac-to-banana adapter
5004-IECR	Red alligator clip
5004-IECN	Black alligator clip

The standard accessories can be different depend on countries.
* Adapter NOCANBA required.

CAT IV 600V

CAT III 1000V

TRMS AC+DC

autoRange

ORDER CODE ***HR000MER***

MERCURY

PROFESSIONAL MULTIMETER
WITH IN-BUILT THERMAL CAMERA

Model **MERCURY** is a digital **TRMS** multimeter which mainly measures **AC/DC voltage** up to **1000V** and **AC/DC current** up to **10A**. Among its important functions, this device features mode **AC+DC**, which is used to also detect direct components possibly overlapping the alternate signal, and measurement of currents with the **use of standard and flexible clamp transducers*** (accessory F3000U) directly connected to it. A **thermal camera** with resolution **80x80pxl** is also built in the device in order to allow for a possible simultaneous reading of electric and thermal values of the item to be tested. MERCURY is also provided with a **Data Logger function** which allows it to perform and **save recordings** of every parameter which can be measured by the device and **graphically display the trend of the values**. The device allows saving pictures in BMP format on a micro SD card (provided), and also has a **Bluetooth** function to connect to mobile devices (tablets/smartphones) through the **dedicated APP HTMercury**, to create reports to share measured results.

* Standard HT96U and flexible F3000U.

Functions and characteristics

- DC voltage
- AC and AC+DC TRMS voltage
- DC current
- AC and AC+DC TRMS current
- AC and AC+DC TRMS current with standard clamp transducers
- AC TRMS current with flexible clamp transducer F3000U
- “Voltsense” for AC voltage detection without contact
- Resistance and Continuity test
- Diode, Capacitance and Frequency tests
- Temperature with K-type probe
- Infrared temperature with in-built thermal camera
- In-built datalogger
- Data HOLD
- MIN/MAX/PEAK
- Relative measurement
- Bargraph
- Backlight
- Input protective fuses
- Auto Power OFF

Main features

Power supply:	1x7.4V rechargeable Li-ION battery, 1200mAh
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V, CAT III 1000V
Insulation:	double insulation
Pollution level:	2
Mechanical protection index:	IP65
Max operating altitude:	2000m
Size (LxWxH):	190x75x55mm
Weight (batteries included):	approx 555g

Included accessories

F3000U	Flexible clamp with full scale 30/300/3000A AC and banana connectors
4324-2	Pair of Red/Black banana connectors with 2/4mm tip
BATMCY	Spare battery Li-ION 7,4V 1500mAh
A0MCY	Multiplug power supply for MERCURY with recharging base
	Micro SD card 8GB,10x
B0MCY	Carrying bag
	Alkaline battery type AAA IEC LR03, 2 pieces ***(for F3000U)***
	Type K bead probe + adapter
	User Manual
	Calibration certificate ISO9000

Optional accessories

HT96U**	Standard clamp with full scale 1/100/1000A AC and Hypertac connector
HT97U**	Standard clamp with full scale 10/100/1000A AC and Hypertac connector
HT98U**	Standard clamp with full scale 1000A DC and Hypertac connector
HT4006	Standard clamp with full scale 40/400A AC/DC and banana connectors

The standard accessories can be different depend on countries.
* Adapter NOCANBA required.

ORDER CODE ***HR000005*** | ***HR000011***

IRONMETER FLASHMETER

TRMS MULTIMETERS WITH BUILT-IN LED TORCH AND TOTAL AUTORANGE (FLASHMETER)

IRONMETER is the true tester for construction sites, realized with a very **sturdy structure** capable of resisting every shock, ready to rise again after any fall **(even from 3 m high)** and keep working with the very same precision and reliability. It is provided with all of the typical functions of everyday use, but also features an **in-built LED torch** to illuminate poorly lit environments, when necessary. **FLASHMETER**, according to the quantity present at the input, **automatically switches** between voltage and resistance measurement.

Functions

	IRONMETER	***FLASHMETER***
TRMS Measurements	•	•
Automatic selection of measurements	-	•
AC/DC Voltage	• (600V)	• (600V)
AC/DC Current	• (10A)	-
Resistance/Continuity Test	•	•
Detection of AC voltage without contact	•	•
Frequency	•	-
Capacitance, Diode test	•	-
Duty cycle	•	-
Built-in flashlight	•	•
Auto HOLD function	-	•
Autorange	•	•
Backlight	•	•
Auto Power OFF	•	•

Main features

Power supply:	2x1.5V batteries type AAA IEC LR03
Safety:	IEC/EN61010-1
Measurement category:	CAT III 600V
Insulation:	double insulation
Pollution level:	2
Max operating altitude:	2000m
Display:	4 LCD, 4000 dots, decimal sign and point
Protection fuses:	Yes ***(IRONMETER)***
Dimensions (LxWxH):	120x65x45mm ***(IRONMETER)*** 140x75x40mm ***(FLASHMETER)***
Weight (batteries included):	200g ***(IRONMETER)*** 220g ***(FLASHMETER)***

Included accessories

4324-2	Pair of test leads with tip 2
	Batteries
	Transport bag
	User Manual

ORDER CODE ***HR000039***

HT39

TRMS MULTIMETER 4000 DOTS WITH SERIAL INTERFACE RS-232

HT39 is a **professional TRMS** multimeter which mainly measures **AC/DC voltage** and **AC/DC current in total Autorange**, further to **Peak values**, useful in **industrial verifications**. The device is also provided with **serial interface RS-232** for **PC connection** and **real-time** display of the quantities to be measured. Under these conditions it is possible (through optional dedicated software) to activate and save recordings of the parameters, with programmable sampling period. **HT39** is designed to reach category **CAT III 1000V** and **CAT IV 600V** and is provided with a fuse with high breaking capacity on the current input.

Functions

- TRMS Measurements
- DC Voltage: 1000V
- AC Voltage: 750V
- AC/DC Current: 10A
- Resistance/Continuity Test
- Frequency
- Capacitance and Diode test
- Data HOLD, MAX/MIN/PEAK
- Relative measurement
- RS-232 interface
- Backlight
- Bargraph
- Auto Power OFF

Main features

Power supply:	1x9V batteries type 6F22
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V, CAT III 1000V
Insulation:	double insulation
Pollution level:	2
Max operating altitude:	2000m
Display:	4 LCD, 4000 dots, decimal sign and point
Protection fuses:	Yes
Dimensions (LxWxH):	164x82x44mm
Weight (batteries included):	400g

Included accessories

	Pair of test leads
	Batteries
	Protective case with support
	User Manual

Optional accessories

B80	Soft carrying bag
SW39	Windows software + RS-232 cable

CAT IV 600V

CAT III 1000V

TRMS

MΩ

ORDER CODE ***HR000701***

HT701

PROFESSIONAL MULTIMETER
FOR INSULATION MEASUREMENT UP TO 1000V

Professional **TRMS** multimeter with **10.000 measuring spots** and measurement of **insulation resistance** with **selectable test voltage** between **50**, **100**, **250**, **500**, **1000VDC**. HT701 is capable of saving the results of measurements in its **internal memory** and has been designed in compliance with **safety standard IEC/EN61010-1** in CAT III 1000V and **CAT IV 600V** with double protective insulation.

PR701
Remote switch probe for insulation measurements

Functions

- DC/AC TRMS voltage
- Insulation with test voltage up to 1000VDC
- Resistance and Continuity test
- Frequency
- Diode test
- Capacity
- Temperature with K-type probe
- Internal memory for measured data saving
- Data HOLD, MAX/MIN, Relative measurement
- Automatic/Manual Range
- Backlight, Bargraph
- Auto Power OFF

Main features

Display:	LCD, 10000 dots
Power supply:	4x1.5V alkaline batteries type AA LR6
Auto Power OFF:	after 20 minutes' idling
Safety:	IEC/EN61010-1, IEC/EN61557-1-2
Measurement category:	CAT III 1000V, CAT IV 600V
Insulation:	double insulation
Pollution level:	2
Max height:	2000m
Size (LxWxH):	207x95x52mm
Weight (batteries included):	630g

Included accessories

4413-2	Pair of test leads
YAAMK0001HT0	Pair of alligator clips
PR701	Probe for insulation measurement
TK101	K-type wire probe
T10	Adapter for K-type probes
	Belt with magnetic terminal
	Protective case, battery and user manual

Technical Specifications

DC voltage
- Measuring range: 0.01mV ÷ 1000V
- Resolution: 0.01mV ÷ 0.1V
- Basic accuracy: ±(0.08%reading + 2 digits)
- Protection: 1000V DC/ACrms

AC TRMS voltage
- Measuring range: 0.01mV ÷ 1000V
- Resolution: 0.01mV ÷ 0.1V
- Basic accuracy: ±(0.9%reading + 3 digits)
- Protection: 1000V DC/ACrms

DC current
- Measuring range: 0.01mA ÷ 400mA
- Resolution: 0.01mA ÷ 0.1A
- Basic accuracy: ±(0.2%reading + 2 digits)
- Protection: Fuse F440mA/1000V

AC TRMS current
- Measuring range: 0.01mA ÷ 400mA
- Resolution: 0.01mA ÷ 0.1mA
- Basic accuracy: ±(1.5%reading + 2 digits)
- Protection: Fuse F440mA/1000V

Resistance and Continuity test
- Measuring range: 0.1Ω ÷ 40MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(0.5%reading + 2 digits)
- Continuity test:<30Ω
- Protection: 1000V DC/ACrms

Frequency
- Measuring range: 0.01Hz ÷ 100kHz
- Resolution: 0.01Hz ÷ 0.01kHz
- Basic accuracy: ±(0.1%reading + 5 digits)
- Protection: 1000V DC/ACrms

Capacity
- Measuring range: 0.001µF ÷ 40mF
- Resolution: 0.001µF ÷ 0.01mF
- Basic accuracy: ±(1.2%reading + 2 digits)
- Protection: 1000V DC/ACrms

Temperature with K-type probe
- Measuring range: -200°C ÷ 1200°C
- Resolution: 0.1°C
- Basic accuracy: ±(1.0%reading + 1°C)
- Protection: 1000V DC/ACrms

Insulation measurement
- Test voltage: 50,100,250,500,1000VDC
- Measuring range: 2MΩ ÷ 22GΩ
- Resolution: 0.001MΩ ÷ 0.1GΩ
- Basic accuracy: ±(1.5%reading + 5 digits)
- Protection: 600V DC/ACrms

CAT IV 600V

CAT III 1000V

TRMS

LoZ

ORDER CODE ***HR000401***

HT401

PROFESSIONAL MULTIMETER FOR AC+DC
TRMS MEASUREMENT AND LoZ INPUT

Professional digital multimeter in **TRMS** with **6000 measuring spots** which mainly carries out measurements of **AC/DC voltage** and **AC/DC current**. Among the many functions of the device there are the **AC+DC** mode, used to consider also **continuous components possibly overlapping the alternate signal** and AC voltage measurements in conditions of **low impedance (LoZ) in order to reduce** the **influences** when measuring **between adjacent conductors**.

Functions

- DC/AC TRMS voltage
- AC+DC measurements
- AC voltage measurement with low impedance "LoZ"
- "VoltSense" for AC voltage detection without contact
- Resistance and Continuity test
- Frequency
- Diode test
- Capacity
- Temperature with K-type probe
- Data HOLD, MAX/MIN/PEAK
- Relative measurement
- Automatic/Manual Range
- Backlight, Bargraph
- Auto Power OFF

Main features

Display:	LCD, 4 digits, 6000 dots
Power supply:	1x9V alkaline battery type 6F22
Battery life:	150 hours
Auto Power OFF:	after 20 minutes' idling
Safety:	IEC/EN61010-1
Measurement category:	CAT III 1000V, CAT IV 600V
Insulation:	Double insulation
Pollution level:	2
Max height:	2000m
Size (LxWxH):	190x94x48mm
Weight (batteries included):	460g

Included accessories

4413-2	Pair of test leads
TK101	K-type wire probe
T10	Adapter for K-type probes
	Protective case, battery and user manual

Technical Specifications

DC voltage
- Measuring range: 0.01mV ÷ 1000V
- Resolution: 0.01mV ÷ 0.1V
- Basic accuracy: ±(0.08%reading + 2 digits)
- Protection: 1000V DC/ACrms

AC TRMS voltage
- Measuring range: 0.01mV ÷ 1000V
- Resolution: 0.01mV ÷ 0.1V
- Basic accuracy: ±(0.8%reading + 5 digits)
- Protection: 1000V DC/ACrms

DC current
- Measuring range: 0.01mA ÷ 10A
- Resolution: 0.01mA ÷ 0.01A
- Basic accuracy: ±(0.8%reading + 3 digits)
- Protection: Fuse F440mA/1000V - Fuse F11A/1000V

AC TRMS current
- Measuring range: 0.01mA ÷ 10A
- Resolution: 0.01mA ÷ 10A
- Basic accuracy: ±(1.2%reading + 3 digits)
- Protection: Fuse F440mA/1000V - Fuse F11A/1000V

Resistance and Continuity test
- Measuring range: 0.1Ω ÷ 40MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(0.8%reading + 2 digits)
- Continuity test:<30Ω
- Protection: 1000V DC/ACrms

Frequency
- Measuring range: 0.01Hz ÷ 100kHz
- Resolution: 0.01Hz ÷ 0.01kHz
- Basic accuracy: ±(0.1%reading + 2 digits)
- Protection: 1000V DC/ACrms

Capacity
- Measuring range: 0.001µF ÷ 10mF
- Resolution: 0.001µF ÷ 0.01mF
- Basic accuracy: ±(1.2%reading + 2 digits)
- Protection: 1000V DC/ACrms

Temperature with K-type probe
- Measuring range: -40°C ÷ 400°C
- Resolution: 0.1°C
- Basic accuracy: ±(1.0%reading + 10 digits)
- Protection: 1000V DC/ACrms

CAT IV 600V

TRMS

YouTube

ORDER CODE ***HR000712***

HT712

DIGITAL MULTIMETER WITH MEASUREMENT
OF VOLTAGE AND PHASE SEQUENCE WITH 1 LEAD

Model **HT712** has been designed to practically and functionally perform the basic functions of a common digital tester in an extremely easy and quick way, thanks to its narrow and long structure. The device measures **AC/DC voltage**, **Frequency**, **Resistance**, and performs **Continuity tests**. Thanks to the innovative and patented 1-terminal method, it is possible to measure Voltage and Frequency, while the **Phase sequence** can also be measured directly on the isolating sheaths of the cables

Functions

- TRMS measurement
- DC/AC voltage
- AC voltage with 1 terminal
- Automatic recognition of AC/DC
- Resistance and Continuity test
- Frequency
- Frequency with 1 terminal
- Phase sequence with 1 terminal
- Data HOLD
- LED indications OK/FAIL
- Autorange
- Measurement category (@ 600V)
- AutoPowerOFF

Main features

Display:	LCD, 3¾ digits, 4000 dots
Power supply:	2x1.5V batteries type AAA
Auto Power OFF:	after 5 minutes' idling
Safety:	IEC/EN 61010-1
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	250x51x30mm
Weight (batteries included):	150g

Technical Specifications

DC voltage
- Measuring range: 0.5V ÷ 600V
- Resolution: 0.1V
- Basic accuracy: ±(0.8%rdg + 1digit)

AC voltage with 2 terminals
- Measuring range: 1.5V ÷ 600V
- Resolution: 0.1V
- Basic accuracy: ±(1.5%rdg + 5digits)

Resist. and Continuity test
- Measuring range: 1Ω ÷ 1500Ω
- Resolution: 1Ω
- Basic accuracy: ±(1.0%rdg + 5digits)
- Continuity: <100Ω

Frequency with 2 terminals
- Measuring range: 40Hz ÷69Hz
- Resolution: 0.1Hz
- Basic accuracy: ±(0.5%rdg + 1digit)

Phase sequence with 1 terminal
- Measuring range: 100V ÷ 600V
- Resolution: 1V

Included accessories

P711EU	Red measuring lead
P710EU	Black measuring lead
B700	Holster
	ISO9000 calibration certificate
	Batteries and user manual

ORDER CODE ***HR000211*** / ***HR000021*** / ***HR00025N***

HT211 | HT21 | HT25N

CAT III 600V

COMPACT DIGITAL MULTIMETERS IN CAT III

Models HT21, HT210 and HT25N are compact digital multimeters capable of carrying out mainly measurements of **AC/DC voltage** up to **600V** and **DC current** up to **10A** (HT25N) with complementary functions of **Resistance**, **Continuity test**, **Diode test** and **9V** and **1.5V alkaline battery tests**. These devices have been designed in compliance with **safety standard IEC/EN61010-1** with double protective insulation in **CAT III 600V**. They are provided with a wide LCD display with backlight and each function can be selected through its relevant switch. A further function of this device is Data HOLD to freeze data on the display and REL for relative measurements. HT210 also offers the possibility of measuring **temperature with the provided K-type probe**, but also with the optional TK1xx probes.

Functions

	HT211	***HT21***	***HT25N***
TRMS	•	-	-
AC / DC voltage	•	•	•
AC / DC current	•	-	• DC
Resistance / Continuity test	•	•	•
Frequency	•	•	-
Capacity	•	•	-
Diode test	•	•	•
Duty Cycle	•	•	-
Temperature with K-type probe	•	-	-
Battery test 1.5V/9V	-	-	•
Data HOLD	•	•	•
Relative measurement	•	•	-
Backlight	•	•	•
Auto Power OFF	•	•	•

Main features

Display: LCD 3½ digits, 2000 dots ***(HT25N)***
4 digits LCD display, 4000 dots, decimal sign and point ***(HT21)***
3¾ digits LCD display, 4000 dots plus decimal sign and point ***(HT211)***

Power supply: 1x9V batteries type IEC 6F22 ***(HT21, HT25N)***
2x1.5V batteries type AAA IEC LR03 ***(HT211)***

Auto Power OFF: after 15 minutes' idling ***(HT211)***
after 30 minutes' idling ***(HT21)***

Safety: IEC/EN 61010-1

Measurement category: CAT III 600V

Pollution level: 2

Insulation: double insulation

Size (LxWxH): 145x70x60mm

Weight (batteries included): 210g ***(HT21, HT211)***, 255g ***(HT25N)***

Included accessories

KIT4000A	Pair of test leads
	Adapter T10 + K-type wire probe ***(HT211)***
	Soft carrying bag for ***(HT21, HT211)***
	Batteries and user manual

Technical Specifications

	HT21 - HT211	***HT25N***
DC voltage		
Measuring range:	20mV ÷ 600V	1mV ÷ 600V
Resolution:	0.001V÷1V	0.1mV÷1V
Basic accuracy:	±(1.2%reading + 2digits)	±(1%reading+ 3digits)
Protection:	600VDC	200Vrms for scale 200.0mV 600V AC/DC
AC voltage		
Measuring range:	20mV ÷ 600V	1V ÷ 600V
Resolution:	0.001V÷1V	0.1V ÷ 1V
Basic accuracy:	±(1.2%reading + 4digits)	±(1.5%reading+12digits)
Protection:	600VAC	600VAC
DC current		
Measuring range:	400.0µA ÷ 10A AC/DC **(HT211)**	2mA ÷ 10A DC
Resolution:	0.1µA ÷ 0.01A **(HT211)**	1µA ÷ 0.01A
Basic accuracy:	±(1%reading+3digits) **(HT211)**	±(1.5%reading+3digits)
Protection:	Rapid fuse 500mA / 600V Quick fuse 10A / 600V for scale 10A **(HT211)**	Rapid fuse 200mA / 600V Quick fuse 10A / 600V for scale 10A
Battery test		
Measuring range:	-	1.5 / 9V
Resolution:	-	1.5V=1mV / 9V=10mV
Basic accuracy:	-	±(1.5%reading+3digits)
Protection:	-	1.5V=100mA / 9V=6mA

	HT21 - HT211	***HT25N***
Resistance and Continuity test		
Measuring range:	2Ω ÷ 40MΩ	1Ω ÷ 2MΩ
Resolution:	0.1Ω ÷ 0.01MΩ	0.1Ω ÷ 1KΩ
Basic accuracy:	±(1%reading + 2digits)	±(1.2%reading + 4digits)
Continuity test	<150Ω	<60Ω
Protection:	250Vrms	250Vrms < 15sec
Frequency		
Measuring range:	25mHz ÷10MHz	-
Resolution:	0.001Hz ÷10KHz	-
Basic accuracy:	±(1.2%reading + 3digits)	-
Protection:	250Vrms	-
Capacity		
Measuring range:	0.2nF ÷ 100µF	-
Resolution:	0.01nF ÷ 0.1µF	-
Diode test		
Resolution:	1mV	1mA
MAX Open-circuit voltage:	1.5VDC	2.8VDC
Basic accuracy:	±(10%reading+5digits)	ND
Duty Cicle		
Measuring range:	0.5% ÷ 99%	-
Resolution:	0.1%	-
Basic accuracy:	±(1.2%reading + 2digits)	-
Protection:	250Vrms	-
Temperature with K probe (only HT211)		
Measuring range:	-20°C ÷ 760°C	-
Resolution:	0.1°C ÷ 1°C	-
Basic accuracy:	±(3%reading + 5°C)	-

CAT III 300V
CAT II 600V

ORDER CODE ***HR000012***

HT12

POCKET DIGITAL MULTIMETER WITH INTEGRATED AC/DC 60A FORK CLAMP METER

Model HT12 is a **super compact** digital multimeter capable of carrying out measurements of **Voltage up to 600V**, **AC/DC current** up to **60A** with **integrated clamp sensor** and complementary functions of **Resistance**, **Continuity test** and **Frequency**. This device has been designed in compliance with **safety standard IEC/EN61010-1** with double protective insulation in **CAT III 300V**, CAT II 600V. Further functions are **Data HOLD** to freeze data on the display and the **Auto Power OFF** function after 10 minutes' idling, in order to preserve the internal battery. The device is housed in a **protective case** which is also used to rewind the test leads.

Functions

- DC/AC voltage
- AC/DC current integrated clamp sensor
- Resistance and continuity test with buzzer
- Current and voltage frequency
- Data HOLD
- Automatic / manual selection of measuring range
- Auto Power OFF

Main features

Display:	LCD, 3¾ digits, 3400 dots
Power supply:	2x1.5V battery type AAA LR03
Auto Power OFF:	after 10 minutes' idling
Safety:	IEC/EN 61010-1
Measurement category:	CAT III 300V, CAT II 600V
Pollution level:	2
Insulation:	double insulation
Size (LxWxH):	128x87x24mm
Weight (batteries included):	210g

Included accessories

Anti-shock protection shell	
Integrated measuring leads and clamp meter	
Batteries and user manual	

Technical Specifications

DC voltage
- Measuring range: 0mV ÷ 600V
- Resolution: 0.001mV ÷ 0.1V
- Basic accuracy: ±(1.5%reading + 4digits)
- Protection against overcharge: 720VDC/AC for 10 seconds

AC voltage
- Measuring range: 0V ÷ 600V
- Frequency band: 50Hz ÷ 400Hz
- Resolution: 0,001V ÷ 1V
- Basic accuracy: ±(1.5%reading + 5 digits)
- Protection against overcharge: 720VDC/AC for 10 seconds

AC/DC current integrated clamp sensor
- Measuring range: 0A ÷ 60A
- Resolution: 0.1A
- Frequency range: 50Hz ÷ 60Hz
- Basic accuracy: ±(2%reading + 5digits)
- Protection against overcharge: 72A DC/AC for 10 seconds

Resistance and Continuity test
- Measuring range: 0Ω ÷ 34MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(1%reading + 3digits)
- Protection against overcharge: 720VDC/AC for 10 seconds
- Continuity buzzer: R<30Ω ± 10Ω

Frequency
- Current measuring range: 0Hz ÷ 10kHz
- Voltage measuring range: 0Hz ÷ 300kHz
- Basic accuracy: ±(0.1%reading + 1digit)
- Resolution: 0,001kHz ÷ 0.01MHz
- Protection against current overcharge: 72A DC/AC for 10 seconds
- Protection against voltage overcharge: 720VDC/AC for 10 seconds

CAT III 300V
CAT II 600V

ORDER CODE ***HR00014D***

HT14D

POCKET DIGITAL MULTIMETER

Model HT14D is a **compact** digital multimeter capable of carrying out mainly measurements of **AC/DC voltage** up to **500V** and **DC current** up to **200mA** with complementary functions of **Resistance**, **Diode test** and **9V alkaline battery test**. This device has been designed in compliance with **safety standard IEC/EN61010-1** with double protective insulation in **CAT III 300V**. HT14D is provided with a wide **LCD display** and each function may be selected through its relevant switch. A further function of this device is **Data HOLD** to freeze data on the display.

Functions

- DC/AC voltage
- DC current
- Resistance and Continuity test
- Diode test
- Battery test 9V
- Data HOLD

Main features

Display:	LCD, 3½ digits, 2000 dots
Power supply:	1x12V batteries type MS21/MN21
Safety:	IEC/EN61010-1
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	105x50x25mm
Weight (batteries included):	100g

Included accessories

KIT4000A	Measuring leads
	Batteries and user manual

Technical Specifications

DC voltage
- Measuring range: 200mV ÷ 500V
- Resolution: 0.1mV ÷ 1V
- Basic accuracy: ±(0.5%rdg + 2digits)

AC voltage
- Range: 1V ÷ 500V
- Resolution: 0.1V ÷ 1V
- Basic accuracy: ±(1.2%rdg + 10digits)

Resistance and Continuity test
- Measuring range: 1Ω ÷ 2000Ω
- Resolution: 0.1Ω ÷ 1kΩ
- Basic accuracy: ±(0.8%rdg + 4digits)

DC current
- Measuring range: 2000µA ÷ 200mA
- Resolution: 1µA ÷ 0.1mA
- Basic accuracy: ±(1.2%rdg + 2digits)

ORDER CODE ***HR000100*** / ***HR000008*** / ***HR000007*** / ***HR000006***

HT10 | HT8 | HT7 | HT6

TWO-POLE MULTIFUNCTION TESTERS WITH IN-BUILT LED TORCH

CAT IV 600V
CAT III 690V

YouTube

HT10, HT8, HT7 and HT6 are designed to carry out the measurements of a digital tester in a practical, quick and functional way thanks to their narrow and long structure, which allows carrying out measurements in any operating conditions. These devices carry out measurements of **AC/DC voltage** with **polarity indication**, **continuity tests** with buzzer and **phase sequence detection** with LED indications and **Display reading**. In addition HT8 and HT6 carry out diode tests, while HT10 and HT7 carry out measurements of AC voltage with low input impedance. **HT10 performs RCD 30mA testing as well**. **All meters** are provided with a **white LED** torch for use in poorly lit environments, and **comply with safety requirements** of **standards IEC/EN61243-3:2014/VDE 0682** ensuring safe and reliable working conditions. The instruments **indicate whether a dangerous voltage is present**, **even if there is no battery power supply** or a failure of the main circuit. The instruments also comply with **IEC/EN61010-1** and **IEC/61010-2-030** in **CAT IV 600V**, **CAT III 690V (HT10 CAT IV 600V, CAT III 1000V)**. **Protection class IP64** (dust and splash-proof) and molded soft rubber grips make HT10, HT8, HT7 and HT6 heavy duty instruments ideal for the **toughest jobs in domestic or industrial applications.**

Use of the integrated LED torch.

Phase detection function through conductive button.

Multimeter function with display and LED indication.

Measurement of phase sequence.

Functions

	HT10	***HT8***	***HT7***	***HT6***
AC/DC Voltage	• (1000V)	• (690V)	• (690V)	• (690V)
AC Voltage with 1 terminal	•	•	•	•
AC Voltage with low impedance input	•	-	•	-
Phase sequence	•	•	•	•
Continuity test with buzzer	•	•	•	•
Resistance measurement	•	-	-	-
Diode test	-	•	-	•
LED indications and sound notifications	•	•	•	•
LCD display	•	•	•	-
Integrated torch	•	•	•	•

Main features

Display:	LCD, 4digits, 6900 dots ***(HT8)***
	LCD, 3½ digits, 1999 dots ***(HT7, HT10)***
Power supply:	2x1.5V battery type AAA LR03
Safety:	IEC/EN61010-1, IEC/EN61010-2-030 ***(HT8)***, IIEC/EN61243-3:2014
Measurement category:	CAT IV 600V - CAT III 690V ***(HT7, HT8)***
	CAT IV 600V - CAT III 1000V ***(HT10)***
Pollution level:	2
Insulation:	double insulation
Size (LxWxH):	255x60x35mm ***(HT6, HT8)***
	240x78x40mm ***(HT7)***
	270x70x30mm ***(HT10)***
Weight (batteries included):	170g ***(HT6, HT8)***
	240g ***(HT7)***
	290g ***(HT10)***

Technical Specifications

	HT10	***HT8***	***HT7***	***HT6***
DC/AC voltage				
Measuring range:	6V ÷ 1000V	10V ÷ 690V	6V ÷ 690V	12V ÷ 690V
Frequency band:	40Hz ÷ 400Hz	16Hz ÷ 400Hz	50Hz ÷ 60Hz	16Hz ÷ 400Hz
Resolution:	1V	0.1V	1V	1V
Basic accuracy:	±(3%reading + 5digits)	±(3%reading + 5digits)	±(1%rdg+3dgt) (DC) ±(1.5%rdg+5dgt) (AC)	In compliance with EN61243-3
Protection against overcharge:	1000VDC/AC	690VDC/AC	690VDC/AC	690VDC/AC
AC voltage with 1 terminal				
Measuring range:	100V ÷ 1000V	100V ÷ 690V	100V ÷ 690V	100V ÷ 690V
Frequency band:	50Hz ÷ 400Hz	50Hz ÷ 60Hz	50Hz ÷ 60Hz	50Hz ÷ 60Hz
Protection against overcharge:	1000VDC/AC	690VAC	690VAC	690VAC
Phase sequence				
Measuring range:	100V ÷ 1000V	120V ÷ 400V (Phase-Earth)	100V ÷ 690V	120V ÷ 400V (Phase-Earth)
Frequency band:	50Hz ÷ 60Hz	50Hz ÷ 60Hz	50Hz ÷ 60Hz	50Hz ÷ 60Hz
Protection against overcharge:	1000VDC/AC	690VAC	690VAC	690VAC
Continuity test with LED and buzzer				
Measuring range:	0Ω ÷ 400kΩ	0Ω ÷ 500kΩ	0Ω ÷ 200kΩ	0Ω ÷ 500kΩ
Test current:	<5µA	<7µA	<1µA	<7µA

Included accessories

	Protection cap for lead, 2 pieces
	Adapter 4mm for lead, 2 pieces
PR9	Mobile lead ***(HT6, HT8)***
	Batteries and user manual

Optional accessories

PR9	Mobile lead ***(HT6, HT8)***
B71	Carrying bag ***(HT7)***

CLAMP METERS

Power clamps

Who?

- Technicians and maintenance operators in the industry sector
- Power Quality Professionals
- Energy managers
- Maintenance operator in the photovoltaic field

Where?

- Transformer cabinets
- Electric switchboars
- Electric motors
- Measurements near inverters
- Photovoltaic installations

Why?

They carry out the main function of mobile equipment and, in this case, offer the possibility of quickly displaying quantities such as **Power, Cosphi, Harmonics, Inrush Currents (INRUSH)** which are functions generally carried out by proper power analyzers.

AC/DC clamps

Who?

- Installers and electricians of industrial and domestic electric systems
- Maintenance operators in the electric sector in general, and in the photovoltaic field

Where?

- Domestic and industrial electric systems
- Electric panels
- Electric motors
- Photovoltaic installations

Why?

Ordinary and preventive maintenance of distribution (also photovoltaic) systems is mainly based on ammetric absorption; in industrial systems it is good practice to use **TRMS** equipment.

Leakage clamps

Who?

- Installers and maintenance operators in the domestic and industrial sector
- Safety verification authorities of domestic and industrial electric systems

Where?

- Electric panels
- Electric motors
- Earthing systems

Why?

A correct mapping of all leakage currents to earth can only be carried out with clamps like HT77N, capable of detecting currents as small as **µA**, and HT78 which, due to the exceptional size of its jaws, is suitable for tests on very big loads.

CLAMP METERS
















	HT9019	HT9014	HT9012	HT4011	HT4010	F3000	HT100	HT7004	HT9021	HT9015	HT4013	HT7005	HT9020	HT4022	HT4020	HT79	HT78	HT77N
MAIN MEASUREMENTS	**AC**								**AC/DC**				**HARMONICS AND/OR POWER**			**LEAKAGE**		
TRMS	•	•	-	-	-	•	•	•	•	•	-	•	•	•	•	•	•	•
Current measuring range	1000A	600A	600A	400A	600A	3000A	200A	300A	1000A	600A	400A	400A	1000A	400A	400A	10A (DC) 20A (AC)	3000A	100A
AC/DC current	• AC	• AC	• AC	• AC	• AC	• AC	• AC	• AC	•	•	•	•	• AC+DC	• AC	• AC	•	• AC	• AC
AC/DC voltage	•	•	•	•	•	-	•	-	•	•	•	-	•	•	•	•	-	-
Leakage current	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	• AC/DC	•	•
Frequency	-	•	-	•	-	-	-	-	•	•	•	-	•	•	•	-	-	-
Resistance and continuity test with buzzer	•	•	•	•	•	-	•	-	•	•	•	-	•	•	•	•	-	-
Capacitance	-	•	-	•	-	-	-	-	•	•	•	-	-	-	-	-	-	-
Diode test	-	•	•	•	•	-	•	-	•	•	•	-	-	-	-	-	-	-
Duty Cycle (%)	-	•	-	•	-	-	-	-	•	•	•	-	-	-	-	-	-	-
Temperature with K-type probe	-	•	-	•	-	-	-	-	•	•	•	-	-	-	-	-	-	-
Phase sequence and phase concordance	-	-	-	-	-	-	-	-	-	-	-	-	•	•	•	-	-	-
Automatic recognition of internal functions	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-
MAINS ANALYSIS																		
AC/DC voltage, current measurement/recording	-	-	-	-	-	-	-	-	-	-	-	-	•*	•*	•*	-	-	-
AC/DC power measurement/recording	-	-	-	-	-	-	-	-	-	-	-	-	•*	•*	•*	-	-	-
AC/DC energy measurement/recording	-	-	-	-	-	-	-	-	-	-	-	-	•*	•*	•*	-	-	-
Cosphi, PF measurement/recording	-	-	-	-	-	-	-	-	-	-	-	-	•*	•*	•*	-	-	-
U/I + THD% harmonics measurement/recording	-	-	-	-	-	-	-	-	-	-	-	-	•*	•*	-	-	-	-
Inrush current measurement (INRUSH)	-	-	-	-	-	-	-	-	-	-	-	•	• Dynamic INRUSH	-	-	-	-	-
ADDITIONAL CHARACTERISTICS																		
Measurement category	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT III 600V	CAT III 600V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT III 300V	CAT IV 600V CAT III 1000V	CAT IV 600V CAT III 1000V	CAT III 600V	CAT III 300V	CAT IV 600V CAT III 1000V	CAT III 600V	CAT III 600V	CAT IV 300V	CAT II 600V CAT III 300V	CAT III 300V
Maximum cable diameter	45mm	30mm	30mm	30mm	30mm	110mm	16mm	20mm	45mm	30mm	30mm	20mm	45mm	30mm	30mm	23mm	108mm	40mm
Measuring counts	6000	6000	2000	4000	2000	3000	10000	4000	6000	6000	4000	4000	9999	10000	10000	5000	3200	6000
Backlight	•	•	•	-	•	•	•	•	•	•	-	•	•	•	•	•	-	•
Bargraph	•	•	-	-	-	-	-	-	•	•	-	-	-	•	•	-	-	•
Autorange	•	•	•	•	•	•	•	•	•	•	-	•	•	•	•	•	-	•
Auto power off	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Contactless AC voltage detection	•	•	•	•	•	-	•	•	•	•	•	•	•	-	-	-	-	-
Data HOLD function	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MIN/MAX function	•	•	• MAX	-	• MAX	-	-	-	•	•	-	-	•	•	•	•	-	-
AVG function (AVERAGE)	-	-	-	-	-	-	-	-	-	-	-	-	-	•	•	-	-	-
PEAK function	•	•	-	-	-	-	-	-	•	•	-	-	•	•	•	-	-	•
Relative measurement (ZERO)	-	•	-	•	-	-	-	-	•	•	•	-	-	-	-	•	-	-
Low-pass filter for harmonic reduction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	• 150Hz	• 100Hz
Analogue output	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•
Electrical parameter logging	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
Memory for data saving	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-	-
PC / Smartphone or Tablet interface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power supply	1x 9V 6F22	1x 9V 6F22	1x 9V 6F22	2x 1.5V AAA	1x 9V 6F22	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA	1x 9V 6F22	1x 9V 6F22	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA	2x 1.5V AAA
Size in mm (L x W x H)	252x88x44	215x74x43	215x74x43	200x66x37	197x70x40	280x120x25	193x54x31	160x55x30	252x88x44	215x74x43	200x66x37	160x55x30	252x88x44	205x64x39	205x64x39	206x76x34	341x194x52	200x70x40
Weight in grams (batteries included)	402	285	285	205	180	170	280	140	442	285	205	140	420	280	280	262	1900	265
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	IEC/ EN61010-1	IEC/ EN61010-1	IEC/ EN61010-1	IEC/ EN61010-1	IEC/ EN61010-1	IEC/ EN61010-1	IEC/ EN61010-1
Order code	**HP009019**	**HP009014**	**HP009012**	**HP004011**	**HP004010**	**HP030000**	**HP000100**	**HP007004**	**HP009021**	**HP009015**	**HP004013**	**HP007005**	**HP009020**	**HP004022**	**HP004020**	**HP000079**	**HP000078**	**HP00077N**

* Real-time measurement only.

CAT IV 600V

CAT III 1000V

TRMS

ORDER CODE ***HP009019***

HT9019

PROFESSIONAL CLAMP METERS
AC 1000A TRMS, CAT IV 600V

Professional clamp meter HT9019 has been designed to measure **AC current up to 1000A and AC/DC voltage up to 1000V** in **TRMS** to reach **CAT IV 600V** according to standard **IEC/EN61010-1**. The clamp is provided with a wide display with **6000 measuring spots**, **backlight** and analogue **bargraph** to allow for a simple reading even in poorly lit environments. Clamp HT9019 is also provided with the auto power off function to preserve its own battery.

Functions

- TRMS measurements
- AC current up to 1000A
- AC/DC voltage up to 1000V
- Resistance and Continuity test
- “Voltsense” for AC voltage detection
- Autorange
- Data HOLD
- MAX/MIN
- PEAK CURRENT (<10ms)
- Bargraph
- Backlight
- AutoPowerOFF

Main features

Display:	LCD, 4 digits, 6000 dots
Conversion type:	TRMS
Power supply:	1x9V batteries type IEC 6F22
Auto Power OFF:	after 15 minutes’ idling
Clamp jaw internal diameter	45mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V - CAT III 1000V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	252x88x44mm
Weight (batteries included):	420g

Technical Specifications

DC voltage (Autorange)
- Measuring range: 3mV ÷ 1000V
- Resolution: 0.01mV ÷ 1V
- Basic accuracy: ±(1.0%reading + 3digits)
- Protection against overcharge: 1000VDC/ACrms

AC TRMS voltage (Autorange)
- Measuring range: 0.03V ÷ 1000V
- Frequency band: 50Hz ÷ 400Hz
- Resolution: 0.001V ÷ 1V
- Basic accuracy: ±(1.0%reading + 4digits)
- Protection against overcharge: 1000VDC/ACrms

AC TRMS current
- Measuring range: 0.3A ÷ 1000A
- Frequency band: 50Hz ÷ 400Hz
- Resolution: 0.01A ÷ 1A
- Basic accuracy: ±(2.8%reading +8digits)
- Protection against overcharge: 1000Arms

Resistance and Continuity test
- Measuring range: 3Ω ÷ 60MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(1.0%reading + 5digits)
- Continuity buzzer: <50Ω

Included accessories

YAAMK0000HT0	Pair of test leads
YABRS0000NN0	Soft carrying bag
	Batteries and user manual

CAT IV 600V

CAT III 1000V

TRMS

ORDER CODE ***HP009014***

HT9014

PROFESSIONAL CLAMP METER AC 600A
TRMS, CAT IV 600V

Professional clamp meter HT9014 has been designed to measure **AC current up to 600A and AC/DC voltage up to 1000V TRMS** to reach **CAT IV 600V** and **CAT III 1000V** in compliance with standard **IEC/EN61010-1**. The clamp is provided with a wide **backlight display** with **6000 measuring spots** and an auto power off function to preserve its battery.

Functions

- Measurements in TRMS, DC/AC voltage, AC current
- Resistance / Continuity test, Frequency
- “Voltsense” sensor
- Diode test, Temperature with K-type probe
- Capacity, Duty Cycle
- Autorange, Data HOLD, MAX/MIN
- PEAK CURRENT (<10ms)
- Relative measurement, Bargraph, Backlight, AutoPowerOFF

Main features

Display:	LCD, 4 digits, 6000 dots
Conversion type:	TRMS
Power supply:	1x9V battery type IEC 622
Auto Power OFF:	after 30 minutes’ idling
Clamp jaw internal diameter	30mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V – CAT III 1000V
Size (LxWxH):	210x75x45mm
Weight (batteries included):	400g

Included accessories

YAAMK0000HT0	Pair of test leads
T10	Adapter for K-type wire probe
TK101	K-type wire probe
	Battery, User manual and Soft carrying bag

Technical Specifications

DC voltage
- Measuring range: 3mV ÷ 1000V
- Resolution: 0.1V ÷ 1V
- Basic accuracy: ±(1.0%reading + 3digits)
- Protection: 1000VDC/AC

AC voltage
- Measuring range: 0.03V ÷ 1000V
- Frequency band: 50 ÷ 400Hz
- Resolution: 0.01V ÷ 1V
- Basic accuracy: ±(1.0%reading + 10digits)
- Protection: 600Vrms

AC current
- Measuring range: 0.3A ÷ 600A
- Frequency band: 50 ÷ 400Hz
- Resolution: 0.1A ÷ 1A
- Basic accuracy: ±(2.8%reading + 8digits)
- Protection: 600Arms

Resistance and Continuity test
- Measuring range: 3Ω ÷ 60kΩ
- Resolution: 0.1Ω ÷ 0.01kΩ
- Basic accuracy: ±(1.0%reading + 5digits)
- Continuity test: <60Ω

Capacity
- Measuring range: 0.2nF ÷ 4mF
- Resolution: 0.01µF ÷ 1µF
- Basic accuracy: ±(2.5%reading + 5digits)

Temperature with K-type probe
- Measuring range: -20°C ÷ 760°C
- Resolution: 0.1°C
- Basic accuracy: ±(2.0%reading + 3°C)

Frequency with test leads and clamp jaws
- Measuring range: 0.5Hz ÷ 60kHz
- Resolution: 0.01Hz ÷ 0.01kHz
- Basic accuracy: ±(1.0%reading + 5digits)
- Protection: 600A/600V

CAT IV 600V

CAT III 1000V

ORDER CODE ***HP009012***

HT9012

PROFESSIONAL CLAMP METER AC 600A, CAT IV 600V

Professional clamp meter HT9012 has been designed to measure **AC current up to 600A and AC/DC voltage up to 1000V** to reach **CAT IV 600V** and **CAT III 1000V** in compliance with standard **IEC/EN61010-1**. The clamp is provided with a wide **backlight display** with **6000 measuring spots** and an auto power off function to preserve its battery.

Functions

- DC/AC voltage
- AC current
- Resistance / Continuity test
- “Voltsense” sensor
- Diode test
- Data HOLD
- MAX function
- Backlight
- AutoPowerOFF

Main features

Display:	LCD, 3½ digits, 2000 dots
Conversion type:	average value
Power supply:	1x9V battery type IEC 622
AutoPowerOFF:	after 30 minutes' idling
Clamp jaw internal diameter	30mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V – CAT III 1000V
Size (LxWxH):	210x75x45mm
Weight (batteries included):	400g

Technical Specifications

DC voltage
- Measuring range: 1mV ÷ 1000V
- Resolution: 0.1mV ÷ 1V
- Basic accuracy: ±(1%reading + 3digits)
- Protection: 1000V DC/AC

AC voltage
- Measuring range: 1mV ÷ 1000V
- Frequency band: 50 ÷ 60Hz
- Resolution: 0.1mV ÷ 1V
- Basic accuracy: ±(1%reading + 4digits)
- Protection: 1000V DC/AC

AC current
- Measuring range: 0.01A ÷ 600A
- Frequency band: 50 ÷ 60Hz
- Resolution: 1mA ÷ 1A
- Basic accuracy: ±(2.5%reading + 4digits)
- Protection: 600Arms

Resistance and Continuity test
- Measuring range: 1Ω ÷ 20MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(1.0%reading + 5digits)
- Continuity buzzer: <100Ω

Included accessories

YAAMK0000HT0	Pair of test leads
	Battery
	User manual and Soft carrying bag

CAT III 600V

ORDER CODE ***HP004011***

HT4011

CLAMP METER AC 400A

Clamp meter HT4011 has been designed to measure **AC current up to 400A and AC/DC voltage up to 600V** to reach **CAT III 600V** in compliance with standard **IEC/EN61010-1**. The clamp is provided with an internal sensor to detect AC voltage also without contact, through a red LED turning on. HT4011 also carries out measurements of **Resistance**, **Continuity tests**, **Frequency**, **Capacity**, **Diode test**, **Duty Cycle** and **Temperature with K-type probe**, among others. The clamp is also provided with the auto power off function to preserve its own battery.

Functions

- AC current up to 400A
- AC/DC voltage up to 600V
- “Voltsense” for AC voltage detection
- Resistance and continuity test with buzzer
- Frequency with leads, Capacity, Diode test
- Duty Cycle (%)
- Temperature with K-type probe
- Autorange, Data HOLD, MAX/MIN/Relative measurement

Main features

Display:	LCD, 4 digits, 4000 dots
Conversion type:	average value
Power supply:	2x1.5V batteries type AAA LR03
Auto Power OFF:	after 30 minutes' idling
Max diameter of clamp:	30mm
Safety:	IEC/EN61010-1
Measurement category:	CAT III 600V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	200x66x37mm
Weight (batteries included):	205g

Included accessories

KIT4000A	Pair of leads with 2mm tip
T10	Adapter for K-type wire probe
TK101	K-type wire probe
	Battery, User manual and Soft carrying bag

Technical Specifications

DC voltage (Autorange)
- Measuring range: 400mV ÷ 600V
- Resolution: 0.1mV ÷ 0.1V
- Basic accuracy: ±(0.8%reading + 2digits)
- Protection against overcharge: 600VDC/ACrms

AC voltage (Autorange)
- Measuring range: 4V ÷ 600V
- Frequency band: 50Hz ÷ 400Hz
- Resolution: 0,001V ÷ 1V
- Basic accuracy: ±(1.8%reading + 8digits)
- Protection against overcharge: 600VDC/ACrms

AC current
- Measuring range: 0.2A ÷ 400A
- Resolution: 0.01A ÷ 1A
- Frequency range: 50Hz ÷ 60Hz
- Basic accuracy: ±(2.5%reading + 8digits)
- Protection against overcharge: 400Arms

Resistance and Continuity test
- Measuring range: 2Ω ÷ 40MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(1.0%reading + 5digits)
- Protection against overcharge: 600VDC/ACrms
- Continuity buzzer: <60Ω

Capacity
- Measuring range: 0.2nF ÷ 400µF
- Resolution: 0.01nF ÷ 0.1µF
- Basic accuracy: ±(3.0%reading + 5digits)
- Protection against overcharge: 600VDC/ACrms

Frequency and Duty Cycle
- Measuring range: 10Hz ÷ 10kHz
- Resolution: 0.01Hz ÷ 0.01kHz
- Basic accuracy: ±(1.5%reading + 2digits)
- Protection against overcharge: 600VDC/ACrms
- Duty Cycle: Measuring range 0.5% ÷ 99%;

Temperature with K-type probe
- Measuring range: -20°C ÷ 760°C
- Resolution: 0.1°C ÷ 1°C
- Basic accuracy: ±(3%reading + 5°C)

CAT III 600V

ORDER CODE ***HP004010***

HT4010

CLAMP METER AC 600A

Clamp meter HT4010 can carry out measurements of **AC current up to 600A** and **AC/DC voltage**, **Resistance**, **Continuity** and **Diode test**. The device is provided with an internal sensor capable o detecting, through a LED turning on and a buzzer sounding, the presence of AC voltage in a spot without contact. This device complies with standard **IEC/EN61010-1** in **CAT III 600V** and it is the ideal solution for measurements to be carried out both in domestic and in industrial environments.

Functions

- AC current up to 600A
- AC/DC voltage up to 600V
- Detection of AC voltage without contact
- Resistance / Continuity test
- Diode test
- Data HOLD
- MAX
- Backlight
- Auto Power OFF

Main features

Display:	LCD, 3½ digits, 2000 dots
Conversion type:	average value
Power supply:	1x9V battery type 6F22
Auto Power OFF:	after 15 minutes' idling
Clamp jaw internal diameter:	30mm
Safety:	EC/EN 61010-1
Measurement category:	CAT III 600V
Insulation:	double insulation
Pollution level:	2
Max height:	2000m
Size (LxWxH):	197x70x40mm
Weight (batteries included):	180g

Technical Specifications

DC voltage
- Measuring range: 1mV ÷ 600V
- Resolution: 0.1mV÷1V
- Basic accuracy: ±(0.8%reading + 2 digits)
- Protection against overcharge: 600Vrms

AC voltage
- Measuring range: 1mV ÷ 600V
- Resolution: 0.1mV÷1V
- Frequency band: 50Hz ÷ 60Hz
- Basic accuracy: ±(1.5%reading+ 3.5mV)
- Protection against overcharge: 600Vrms

AC current
- Measuring range: 0.01A ÷ 600A
- Resolution: 1mA ÷ 0.1A
- Frequency band: 50Hz ÷ 60Hz
- Basic accuracy: ±(2.5%reading + 4digits)
- Protection against overcharge: 600Arms

Resistance and continuity test with buzzer
- Measuring range: 1Ω ÷ 20MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(1.0%reading + 4digits)
- Continuity buzzer: <150Ω

Included accessories

KIT4000A	Pair of test leads
	Soft carrying bag, battery and user manual

ORDER CODE ***HP030000***

F3000

CLAMP METER WITH FLEXIBLE CLAMP JAWS
AC 3000A

Professional clamp meter F3000 has been designed to measure **AC current up to 3000A** in **TRMS** in **total autorange** to reach **CAT IV 600V**, **CAT III 1000V** according to standard **IEC/EN61010-1**. The clamp is provided with innovative **flexible jaws** capable of reaching a **maximum diameter of 110mm** and allowing for an easy reading in any condition. The clamp is provided with a wide display with **3000 measuring spots**, **Data HOLD** function and **Backlight** to allow for a simple reading even in poorly lit environments. The clamp is also provided with the auto power off function to preserve its own battery.

Functions

- TRMS measurements
- AC TRMS current up to 3000A
- Flexible jaws with big diameter
- Autorange
- Data HOLD
- MAX/MIN
- Backlight
- Auto Power OFF

Main features

Display:	LCD, 4 digits, 3000 dots
Conversion type:	TRMS
Power supply:	2x1.5V alkaline batteries type AAA LR03
Auto Power OFF:	after 20 minutes' idling
Max diameter of clamp:	110mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V - CAT III 1000V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	280x120x25mm
Weight (batteries included):	170g

Technical Specifications

AC TRMS current
- Measuring range: 0.1A ÷ 3000A
- Resolution: 0.01 ÷ 1A
- Frequency range: 45Hz ÷ 500Hz
- Basic accuracy: ±(3%reading + 5digits)

Included accessories

Batteries
Soft carrying bag
User Manual

CAT IV 600V

CAT III 1000V

TRMS

ORDER CODE ***HP000100***

HT100

FORK CLAMP METER
AC 200A TRMS

Professional clamp meter HT100 is provided with automatic recognition of functions. The measurement of **AC current up to 200A and AC/DC voltage up to 1000V in TRMS** reacheas **CAT IV 600V** and **CAT III 1000V** in compliance with standard **IEC/EN61010-1**. The clamp is provided with **"open" jaws**, with a wide **display with 9999 measuring spots**, **"Voltsense"** phase detector function, **Data HOLD** and **backlight** to allow for a simple reading even in poorly lit environments. HT100 also carries out measurements of **Resistance**, **Continuity test** and **Diode test**. The clamp is also provided with the auto power off function to preserve its own battery.

Functions

- TRMS measurements
- AC TRMS current up to 200A
- DC/AC TRMS voltage up to 1000V
- "Voltsense" for AC voltage detection
- Resistance
- Continuity test with buzzer
- Diode test
- Autorange
- Autorecognition function
- Data HOLD
- Backlight
- Auto Power OFF

Main features

Display:	LCD, 4 digits, 10000 dots, backlight
Conversion type:	TRMS
Power supply:	2x1.5V alkaline batteries type AAA LR03
Auto Power OFF:	after 20 minutes' idling
Max diameter of clamp:	16mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V, CAT III 600V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	193x54x31mm
Weight (batteries included):	280g

Technical Specifications

DC voltage (Autorange)
- Measuring range: 2.2V ÷ 1000V
- Resolution: 0.1V
- Basic accuracy: ±(0.3%reading + 2digits)
- Protection against overcharge: 1000VDC/ACrms

AC TRMS voltage (Autorange)
- Measuring range: 1.3V ÷ 1000V
- Frequency band: 50Hz ÷ 500Hz
- Resolution: 0.1V
- Basic accuracy: ±(0.9%reading + 3digits)
- Protection against overcharge: 1000VDC/ACrms

AC TRMS current (Autorange)
- Measuring range: 1.5A ÷ 200A
- Resolution: 0.1A
- Frequency range: 50Hz ÷ 60Hz
- Basic accuracy: ±(3%reading + 5digits)
- Protection against overcharge: 200Arms

Resistance and Continuity test
- Measuring range: 0Ω ÷ 9999Ω
- Resolution: 1Ω
- Basic accuracy: ±(0.9%reading + 2digits)
- Protection against overcharge: 1000VDC/ACrms
- Continuity buzzer: <25Ω

Diode test
- Measuring range: 0.4V ÷ 0.8V
- Resolution: 0.1V
- Basic accuracy: ±(1%reading + 3digits)
- Protection against overcharge: 1000VDC/ACrms

Included accessories

4413-2	Pair of test leads
	Batteries and user manual

TRMS

INRUSH

ORDER CODE ***HP007004*** | ***HP007005***

HT7004
HT7005

POCKET CLAMP METERS
FOR TRMS AC CURRENT UP TO 400A
WITH MEASUREMENT OF INRUSH CURRENT

Clamp meter **HT7005** can measure **DC** and **AC TRMS** current up to **400A** in Autorange, in compliance with standard IEC/EN61010-1, CAT III 300V, **further to measuring the inrush current of electric motors** with a response time of **100ms**. Model **HT 7004** can measure **only AC TRMS current** up to **300A**. Both devices are provided with Data HOLD function and Auto Power Off function, in order to preserve the internal battery when not in use. Thanks to its **extremely small size**, these models are very practical and they are the ideal solution for simple measurements in the most common domestic and industrial environments.

Functions

	HT7004	***HT7005***
AC TRMS current	300A •	400A •
DC current	-	400A •
Inrush current (INRUSH)	-	•
AC voltage detection without contact	•	•
Autorange	•	•
Data HOLD	•	•
ZERO function (zeroing)	-	•
Backlight	•	•
Auto Power OFF	•	•

Main features

Power supply:	2x1.5V batteries type AAA LR03
Safety:	IEC/EN61010-1
Measurement category:	CAT III 300V
Insulation:	double insulation
Pollution level:	2
Max operating altitude:	2000m
Display:	3¾ LCD, 4000 dots, decimal sign and point
Max cable diameter:	20mm
Size (LxWxH):	155x60x25mm
Weight (batteries included):	140g

Included accessories

	Soft carrying bag
	Batteries
	User Manual

CAT IV 600V

CAT III 1000V

TRMS

ORDER CODE ***HP009021***

HT9021

AC/DC TRMS CAT IV 600V CLAMP METER WITH TEMPERATURE MEASUREMENT

HT9021 has been designed to measure **AC/DC current up to 1000A in TRMS** reaching **CAT IV 600V** and **CAT III 1000V** in compliance with **safety standard IEC/EN61010-1**. The clamp is provided with a display with **6000 measuring spots** with **backlight** and **bargraph** to allow for a simple reading even in poorly lit environments. HT9021 also carries out **measurements of voltage up to 1000V**, **Resistance**, **Frequency**, **Capacity** and **Temperature with K-type probe**.

Functions

- TRMS measurements
- AC/DC voltage up to 1000V
- AC/DC current up to 1000A
- Resistance and Continuity test
- “Voltsense” for AC voltage recognition
- Frequency with clamp jaws and leads
- Capacity, Duty cycle, Diode test
- Temperature with K-type probe
- Autorange, Data HOLD
- MAX/MIN, PEAK (<10ms)
- Relative measurements
- Backlight, Bargraph
- Auto Power OFF

Main features

Display:	LCD, 4 digits, 6000 dots
Conversion type:	TRMS
Power supply:	1x9V battery type IEC6F22
Auto Power OFF:	after 15 minutes' idling
Max diameter of clamp:	45mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V – CAT III 1000V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	252x88x42mm
Weight (batteries included):	420g

Technical Specifications

DC voltage (Autorange)
- Measuring range: 3mV ÷ 1000V
- Basic accuracy: ±(1.0%reading + 3digits)

AC TRMS voltage (Autorange)
- Measuring range: 0.03V ÷ 1000V
- Frequency range: 50Hz ÷ 400Hz
- Basic accuracy: ±(1.0%reading + 4digits)

DC current
- Measuring range: 0.3A ÷ 1000A
- Basic accuracy: ±(2.0%reading + 8digits)

AC TRMS current
- Measuring range: 0.3A ÷ 1000A
- Frequency range: 50Hz ÷ 400Hz
- Basic accuracy: ±(2.8%reading + 8digits)

Resistance and Continuity test
- Measuring range: 3Ω ÷ 60MΩ
- Basic accuracy: ±(1.0%reading + 5 digits)
- Buzzer: <50Ω

Frequency with clamp jaws and leads
- Measuring range: 0.5Hz÷ 60kHz
- Basic accuracy: ±(1.0%reading + 5digits)

Capacity
- Measuring range: 0.2nF ÷ 4mF
- Basic accuracy: ±(2.5%reading + 5digits)

Temperature with K-type probe
- Measuring range: -20°C ÷ 760°C;
- Basic accuracy: ±(2.0%reading + 3°C)

Included accessories

YAAMK0000HT0	Pair of test leads
T10	Adapter for K-type wire probe
TK101	K-type wire probe
YABRS0000NN0	Soft carrying bag
	Batteries and user manual

CAT IV 600V

CAT III 1000V

TRMS

ORDER CODE ***HP009015***

HT9015

AC/DC TRMS 600A CAT IV CLAMP METER WITH TEMPERATURE MEASUREMENT

HT9015 has been designed to measure **AC/DC current up to 600A and AC/DC voltage up to 1000V** in **TRMS** reaching **CAT IV 600V** and **CAT III 1000V** in compliance with **safety standard IEC/EN61010-1**. The clamp is provided with a display with **6000 measuring spots** with **backlight** and **bargraph** to allow for a simple reading even in poorly lit environments. HT9015 also measures **Resistance**, **Frequency**, **Capacity** and **Temperature with K-type probe**.

Functions

- TRMS measurements
- AC/DC voltage up to 1000V
- AC/DC current up to 600A
- Resistance and Continuity test
- “Voltsense” for AC voltage recognition
- Frequency with clamp jaws and leads
- Capacity
- Duty cycle
- Diode test
- Temperature with K-type probe
- Autorange
- Data HOLD
- MAX/MIN
- PEAK (<10ms)
- Relative measurements
- Backlight and Bargraph
- Auto Power OFF

Main features

Display:	LCD, 4 digits, 6000 dots
Conversion type:	TRMS
Power supply:	1x9V battery type IEC6F22
Auto Power OFF:	after 15 minutes' idling
Max diameter of clamp:	30mm
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 600V - CAT III 1000V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	210x75x45mm
Weight (batteries included):	400g

Technical Specifications

DC voltage (Autorange)
- Measuring range: 3mV ÷ 1000V
- Basic accuracy: ±(1.0%reading + 3digits)

AC TRMS voltage (Autorange)
- Measuring range: 0.03V ÷ 1000V
- Frequency range: 50Hz ÷ 400Hz
- Basic accuracy: ±(1.0%reading + 4digits)

DC current
- Measuring range: 0.3A ÷ 600A
- Basic accuracy: ±(2.0%reading + 8digits)

AC TRMS current
- Measuring range: 0.3A ÷ 600A
- Frequency range: 50Hz ÷ 400Hz
- Basic accuracy: ±(2.8%reading + 8digits)

Resistance and Continuity test
- Measuring range: 3Ω ÷ 60MΩ
- Basic accuracy: ±(1.0%reading + 5 digits)
- Buzzer: <50Ω

Frequency with clamp jaws and leads
- Measuring range: 0.5Hz÷ 60kHz
- Basic accuracy: ±(1.0%reading + 5digits)

Capacity
- Measuring range: 0.2nF ÷ 4mF
- Basic accuracy: ±(2.5%reading + 5digits)

Temperature with K-type probe
- Measuring range: -20°C ÷ 760°C; -4°F ÷ 1400°F
- Basic accuracy: ±(2.0%reading + 6°F)

Included accessories

YAAMK0000HT0	Pair of test leads
T10	Adapter for K-type wire probe
TK101	K-type wire probe
	Battery, User manual and Soft carrying bag

CAT III 600V

ORDER CODE ***HP004013***

HT4013

CLAMP METER AC/DC 400A

Clamp meter HT4013 has been designed to measure **AC/DC current up to 400A and AC/DC voltage up to 600V** to reach **CAT III 600V** in compliance with standard **IEC/EN61010-1**. The clamp is provided with an internal sensor to detect AC voltage also without contact, through a red LED turning on. This model also carries out measurements of **Resistance**, **Continuity tests**, **Frequency**, **Capacity**, **Diode test**, **Duty Cycle** and **Temperature with K-type probe**, among others. The clamp is also provided with the auto power off function to preserve its own battery.

Functions

- AC/DC current up to 400A
- AC/DC voltage up to 600V
- "Voltsense" for AC voltage detection
- Resistance and continuity test with buzzer
- Frequency with leads, Capacity, Diode test
- Duty Cycle (%)
- Temperature with K-type probe
- Autorange, Data HOLD, MAX/MIN/Relative measurement

Main features

Display:	LCD, 4 digits, 4000 dots
Conversion type:	RMS
Power supply:	2x1.5V alkaline batteries type AAA LR03
Auto Power OFF:	after 30 minutes' idling
Max diameter of clamp:	30mm
Safety:	IEC/EN61010-1
Measurement category:	CAT III 600V
Insulation:	double insulation
Pollution level:	2
Size (LxWxH):	200x66x37mm
Weight (batteries included):	205g

Included accessories

KIT4000A	Pair of leads with 2mm tip
T10	Adapter for K-type wire probe
TK101	K-type wire probe
	Battery, User manual and Soft carrying bag

Technical Specifications

DC voltage (Autorange)
- Measuring range: 2mV ÷ 600V
- Resolution: 0.1mV ÷ 1V
- Basic accuracy: ±(0.8%reading + 2digits)
- Protection against overcharge: 600VDC/ACrms

AC voltage (Autorange)
- Measuring range: 0.02V ÷ 600V
- Frequency band: 50Hz ÷ 400Hz
- Resolution: 0,001V ÷ 1V
- Basic accuracy: ±(1.5%reading + 5digits)
- Protection against overcharge: 600VDC/ACrms

AC/DC current
- Measuring range: 0.2A ÷ 400A
- Resolution: 0.01A ÷ 1A
- Frequency range: 50Hz ÷ 60Hz
- Basic accuracy: ±(2.5%reading + 5digits)
- Protection against overcharge: 400Arms

Resistance and Continuity test
- Measuring range: 2Ω ÷ 40MΩ
- Resolution: 0.1Ω ÷ 0.01MΩ
- Basic accuracy: ±(1.0%reading + 4digits)
- Protection against overcharge: 600VDC/ACrms
- Continuity buzzer: <30Ω

Capacity
- Measuring range: 0.2nF ÷ 100µF
- Resolution: 0.01nF ÷ 0.1µF
- Basic accuracy: ±(3.0%reading + 5digits)
- Protection against overcharge: 600VDC/ACrms

Frequency and Duty Cycle
- Measuring range: 10Hz ÷ 10kHz
- Resolution: 0.01Hz ÷ 0.01kHz
- Basic accuracy: ±(1.5%reading + 2digits)
- Protection against overcharge: 600VDC/ACrms
- Duty Cycle: Measuring range 0.5% ÷ 99%;

Temperature with K-type probe
- Measuring range: -20°C ÷ 760°C
- Resolution: 0.1°C ÷ 1°C
- Basic accuracy: ±(3%reading + 5°C)

CAT IV 600V

CAT III 1000V

TRMS

DYNAMIC INRUSH

YouTube

ORDER CODE ***HP009020***

HT9020

PROFESSIONAL CLAMP METERS WITH POWER/HARMONIC AND INRUSH MEASUREMENT

HT9020 have been designed for measuring DC, AC+DC TRMS current up to 1000A to obtain CAT IV 600V in compliance with standard IEC/EN61010-1. It also measures **Active, Reactive and Apparent Power, Energy, voltage/current harmonic analysis up to the 25th with THD% calculation** in single-phase or balanced three-phase systems. It allows testing phase sequence and concordance with the 1-terminal measuring method. It is also possible to detect the events linked to **motor starting (INRUSH) currents**. HT9020 is provided with a wide graphic dot-matrix screen (128x128pxl) with backlight, in order to allow reading data even in poorly lit environments. Auto power off function preserves internal battery.

Functions

- DC, AC + DC TRMS current up to 1000A
- DC, AC + DC TRMS voltage up to 1000V
- Frequency with test leads and clamp jaws
- Phase sequence / phase concordance
- Resistance and Continuity test
- Measurement of DC power and energy
- Active, reactive, apparent power measurement on single-phase systems
- Power factor measurement on single-phase systems
- Voltage/current harmonic measurement up to the 25th and THD%
- Motor starting (INRUSH) current detection
- Autorange
- Backlight
- Auto Power OFF
- Data HOLD, MAX/MIN/CREST

Main features

Display:	dot-matrix 128x128pxl with backlight
Power supply:	2x1.5V batteries type AAA
Duration:	> 50 hours
Safety:	IEC/EN61010-1
Insulation:	Double insulation
Pollution level:	2
Measurement category:	CAT IV 600V to earth, max 1000V between inputs
Max diameter of cable:	45mm
Size (LxWxH):	252x88x44mm
Weight (batteries included):	0.42kg

Included accessories

YAAMK0000HT0	Pair of test leads
YAAMK0001HT0	Pair of alligator clips
YABRS0000NN0	Soft carrying bag
	Batteries
	User manual on CD-ROM
	ISO9000 calibration certificate
	Quick user guide

ORDER CODE ***HP004022*** | ***HP004020***

HT4022
HT4020

AC TRMS 400A CLAMP METERS WITH POWER/HARMONICS MEASUREMENT

Professional clamp meters HT4020 and HT4022 carry out measurements in **TRMS** of **AC current up to 400A**, **AC/DC voltage up to 600V**, **Frequency**, **Resistance**, **Continuity test**, **Active**, **Reactive**, **Apparent Power**, **Cosφ**, **Energy for balanced single-phase and/or three-phase systems, further to the detection of phase sequence by 1-terminal method**. Model **HT4022** also carries out the absolute/percentage measurement of **voltage and current harmonic components** with calculation of **THD%**. Each device **complies** with **IEC/EN61010-1** in **CAT III 600V** and is the ideal solution or troubleshooting typical problems in **industrial environments** such as **non-linear loads**, **frequency-controlled motors**.

Functions

	HT4022	HT4020
DC/AC TRMS voltage	•	•
AC TRMS current	•	•
Resistance and Continuity test	•	•
Frequency with test leads and clamp jaws	•	•
Active, Reactive, Apparent power	•	•
Active, Reactive, Apparent energy	•	•
Power factor and Cosφ	•	•
V/ I harmonics up to the 25th and THD%	•	-
Phase sequence with 1 terminal	•	•
Autorange	•	•
Data HOLD	•	•
MAX/MIN/AVG/PEAK	•	•
Backlight	•	•
AutoPowerOFF	•	•

Main features

Display:	LCD, 4 digits, 10000 dots
Conversion type:	TRMS, 64 samples in 20ms
Power supply:	2x1.5V batteries type AAA LR03
Auto Power OFF:	after 5 minutes' idling
Safety:	IEC/EN 61010-1
Measurement category:	CAT III 600V
Pollution level:	2
Insulation:	double insulation
Max height:	2000m
Clamp jaw internal diameter	30mm
Size (LxWxH):	205x64x39mm
Weight (batteries included):	approx 280g

Included accessories

4413-2	Pair of test leads
YAAMK0001HT0	Pair of alligator clips
B80	Soft carrying bag
	Rubber cap for test lead
	ISO9000 calibration certificate
	Batteries and user manual

Technical Specifications

	HT4022	HT4020
DC voltage		
Measuring range:	0.1V ÷ 600V	0.1V ÷ 600V
Resolution:	0.1V	0.1V
Basic accuracy:	±(1.0%read. + 3digits)	±(1.0%read. + 3digits)
Protection:	600Vrms	600Vrms
AC TRMS voltage		
Measuring range:	1.6V ÷ 600V	1.6V ÷ 600V
Resolution:	0.1V	0.1V
Basic accuracy:	±(1.0%read. + 3digits)	±(1.0%read. + 3digits)
Protection:	600Vrms	600Vrms
AC TRMS current		
Measuring range:	0.1A ÷ 400A	0.1A ÷ 400A
Resolution:	0.1A	0.1A
Basic accuracy:	±(1.0%read. + 3digits)	±(1.0%read. + 3digits)
Protection:	600Arms	600Arms
Active, Reactive, Apparent AC power [kW, kVAR, kVA]		
Measuring range:	0.01 ÷ 1000	0.01 ÷ 1000
Resolution:	0.01 ÷ 0.1	0.01 ÷ 0.1
Basic accuracy:	±(3.5%read. + 3digits)	±(3.5%read. + 3digits)
Protection:	600V/600Arms	600V/600Arms

	HT4022	HT4020
Power factor and Cosφ		
Measuring range:	0.20 ÷ 1.00	0.20 ÷ 1.00
Resolution:	0.01	0.01
Basic accuracy:	±3°	±3°
voltage and current harmonics		
Harmonic order:	1 ÷ 25	-
Resolution [V, A]:	0.1	-
Basic accuracy:	±(10%read. + 5digits)	-
Resistance and Continuity test		
Measuring range:	0.1Ω ÷ 2kΩ	0.1Ω ÷ 2kΩ
Resolution:	0.1Ω ÷ 3Ω	0.1Ω ÷ 3Ω
Basic accuracy:	±(1.0%read. + 5digits)	±(1.0%read. + 5digits)
Continuity test	<40Ω	<40Ω
Protection:	600Vrms	600Vrms
Frequency with test leads and clamp jaws		
Measuring range:	40Hz ÷ 400Hz	40Hz ÷ 400Hz
Resolution:	0.1Hz	0.1Hz
Basic accuracy:	±(0.5%read.+ 1digit)	±(0.5%read.+ 1digit)
Protection:	600Vrms/600Arms	600Vrms/600Arms
Phase sequence with 1 terminal		
Measuring range:	50V ÷ 600V	50V ÷ 600V
Frequency range:	40Hz ÷ 69Hz	40Hz ÷ 69Hz
Protection:	600Vrms	600Vrms

CAT III 300V

CAT II 600V (ONLY HT78)

TRMS

ORDER CODE ***HP000079*** / ***HP000078*** / ***HP00077N***

HT79 | HT78 HT77N

CLAMP METERS FOR MEASURING LEAKAGE CURRENT

Models HT77N, HT78 and HT79 are clamp meters designed for an **accurate measurement of very low values of** **AC** and **DC** currents (only HT79) and, therefore, they are mainly employed in detecting and defining **leakage currents** in **domestic and industrial electric systems**, which typically cause the RCDs' tripping. Devices HT77N and HT78 are provided with an **in-built low-pass filter to eliminate harmonic components**. HT78 is provided with an analogue output for the connection to possible external data loggers and, thanks to its big jaws (108mm), it is possible to measure leakage currents even in installations with cables having a big cross-section. Model **HT79** also allows measuring **AC/DC voltage** and resistance/continuity test.

Functions

	HT77N	***HT78***	***HT79***
TRMS measurements	•	•	•
AC/DC voltage	-	-	• (300V)
DC Current	-	-	• (10A)
AC Current	• (100A)	• (3000A)	• (20A)
Resistance and Continuity test	-	-	•
Low-pass filter	• (150Hz)	• (100Hz)	-
Analogue DC output	-	•	-
Data HOLD	•	•	•
Auto HOLD	•	•	-
Peak HOLD	•	•	-
Relative measurements (ZERO)	-	-	•
Autorange	•	-	•
Backlight	•	-	•
Bargraph	•	-	-
Auto Power OFF	•	•	•

Technical Specifications

	HT77N	***HT78***	***HT79***
AC TRMS current			
Measuring range:	0.01mA ÷ 100A	0.1mA ÷ 3000A	0.1mA ÷ 20A
Resolution:	0.001mA ÷ 0.1A	0.1mA ÷ 1A	0.1mA ÷ 0.01A
Basic accuracy:	±(1.0read + 8digit)	±(1.5read + 8digit)	±(1.0read + 5digit)
Protection:	max 120Arms	3000Arms	max 20Arms
DC current			
Measuring range:	-	-	0.1mA ÷ 20A
Resolution:	-	-	0.1mA ÷ 0.01A
Basic accuracy:	-	-	±(1.0read + 10digit)
Protection:	-	-	max 10ADC

Main features

Display:	LCD 4 digits, 6000 dots ***(HT77N)*** LCD 4 digits, 3200 dots ***(HT78)*** LCD 4 digits, 5000 dots ***(HT79)***
Conversion type:	TRMS
Power supply:	2x1.5V batteries type AAA LR03
Safety:	IEC/EN 61010-1
Measurement category:	CAT III 300V ***(HT77N)*** CAT II 600V, CAT III 300V ***(HT78)*** CAT IV 300V ***(HT79)***
Insulation:	double insulation
Pollution level:	2
Max height:	2000m
Clamp jaw internal diameter	40mm ***(HT77N)***, 108mm ***(HT78)*** 23mm ***(HT79)***
Auto Power OFF:	after 20 minutes' idling ***(HT77N)*** after 10 minutes' idling ***(HT78)***
Size (LxWxH):	202x75x42mm ***(HT77N)*** 341x194x52mm ***(HT78)*** 206x76x34mm ***(HT79)***
Weight (batteries included):	265g ***(HT77N)***, 1.9kg ***(HT78)***, 262g ***(HT79)***

Included accessories

- Pair of test leads ***(HT79)***
- Soft carrying bag
- Batteries
- Non-slip strap ***(HT78)***
- User Manual

BURIED CABLE LOCALIZER AND REVOLUTION COUNTER

BURIED CABLE LOCALIZER AND REVOLUTION COUNTER

	HT-5000	HT2234N
	CABLE LOCALIZER	**REVOLUTION COUNTER**
Localization of buried cables and metal tubes	•	-
Inductive pairing with 33kHz signal via antenna	•	-
Direct 33kHz pairing with external accessories	•	-
Selectable transmission power	•	-
Intermittent or continuous signal	•	-
Passive search mode without transmitter	•	-
Automatic depth measurement	•	-
Manual or automatic setting of sensitivity	•	-
Headset socket for noisy environments	•	-
Measurement of speed of rotating parts in RPMs (rev/min) with and without contact	-	•
Events counter	-	•
Laser pointer	-	•
MAX / MIN / HOLD	-	•
AutoPowerOFF	-	•
Order code	**HN500000**	**HA02234N**

ORDER CODE ***HN500000***

HT-5000

PROFESSIONAL METAL TUBE
AND BURIED CABLES TRACER

Civil engineering work is accelerated, earth-moving machines are used efficiently and the risk of accidents is minimised thanks to the HT-5000. This unit is especially designed **to know the position and the depth of underground pipes and cables or cabling plans in a very quick and easy way**. The model is composed by a **Transmitter** and a **Receiver** and the principle used is the propagation of a electromagnetic field inside a object crossed by a signal generated with a direct coupling (finding energized or not energized objects with accessible parts) and inductive coupling (signal spread by transmitter by integrated antenna) for finding of not accessible parts (e.g: earthmoving areas). The tracing can be performed also in passive mode by the use of receiver only in order to locate cable or pipes crossed by 50/60Hz electrical current or radiofrequency signals. Both transmitter and receiver are designed with **IP56** (protection by dust and water) for typical external "in field" environment and a wide number of optional accessories are available also for finding of non metal objects. Most of the times that device is used to **locate buried cables** and **iron pipelines**.

Functions

- Inductive pairing with 33kHz signal via antenna
- Direct 33kHz pairing with external accessories
- Selectable transmission power
- Intermittent or continuous signal
- Passive search mode without transmitter
- Automatic depth measurement
- Manual or automatic setting of sensitivity
- Headset socket for noisy environments

Included accessories

Transmitter TX5000 and receiver RX5000
Set of measuring cables with alligator clips
Metal probe
Batteries for transmitter and receiver, Soft carrying bag and user manual

Optional accessories

820005314	Clamp 100mm diameter for inductive pairing
GOK50-R	Kit of flexible probes for non-metallic objects
890008852	Set of cables (Schuko plug + cable with RJ11 + coax cable)

Main features

Transmitter TX5000	
Transmission power:	0.1W / 0.5W
Signal frequency:	33kHz
Mechanical protection:	IP56 (dust and water)
Power supply:	6x1.5V batteries type IEC LR20
Size (LxWxH):	260 x 140 x 255mm
Weight (batteries included):	1.7 kg
Receiver RX5000	
Frequency range:	15kHz ÷ 23kHz, 50/60Hz (electric power)
Depth range:	0.3m ÷ 7m
Mechanical protection:	IP56 (dust and water)
Power supply:	10x1.5V batteries type AA IEC LR6
Size (LxWxH):	600 x 252 x 99mm
Weight (batteries included):	2.5 kg

ORDER CODE ***HA02234N***

HT2234N

PORTABLE REVOLUTION COUNTER

HT2234N is a **digital revolution counter** for measuring the speed of **rotating mechanical parts** (**discs**, **drive shafts**, etc…) both **with** and **without contact**, making use of a light beam transmitted and reflected by the target.

KITHT2234N Set of rubber spare parts + reflecting band

Functions

- Measurement of speed of rotating parts in RPMs (rev/min) with and without contact
- Events counter
- Laser pointer
- MAX / MIN / HOLD
- AutoPowerOFF

Included accessories

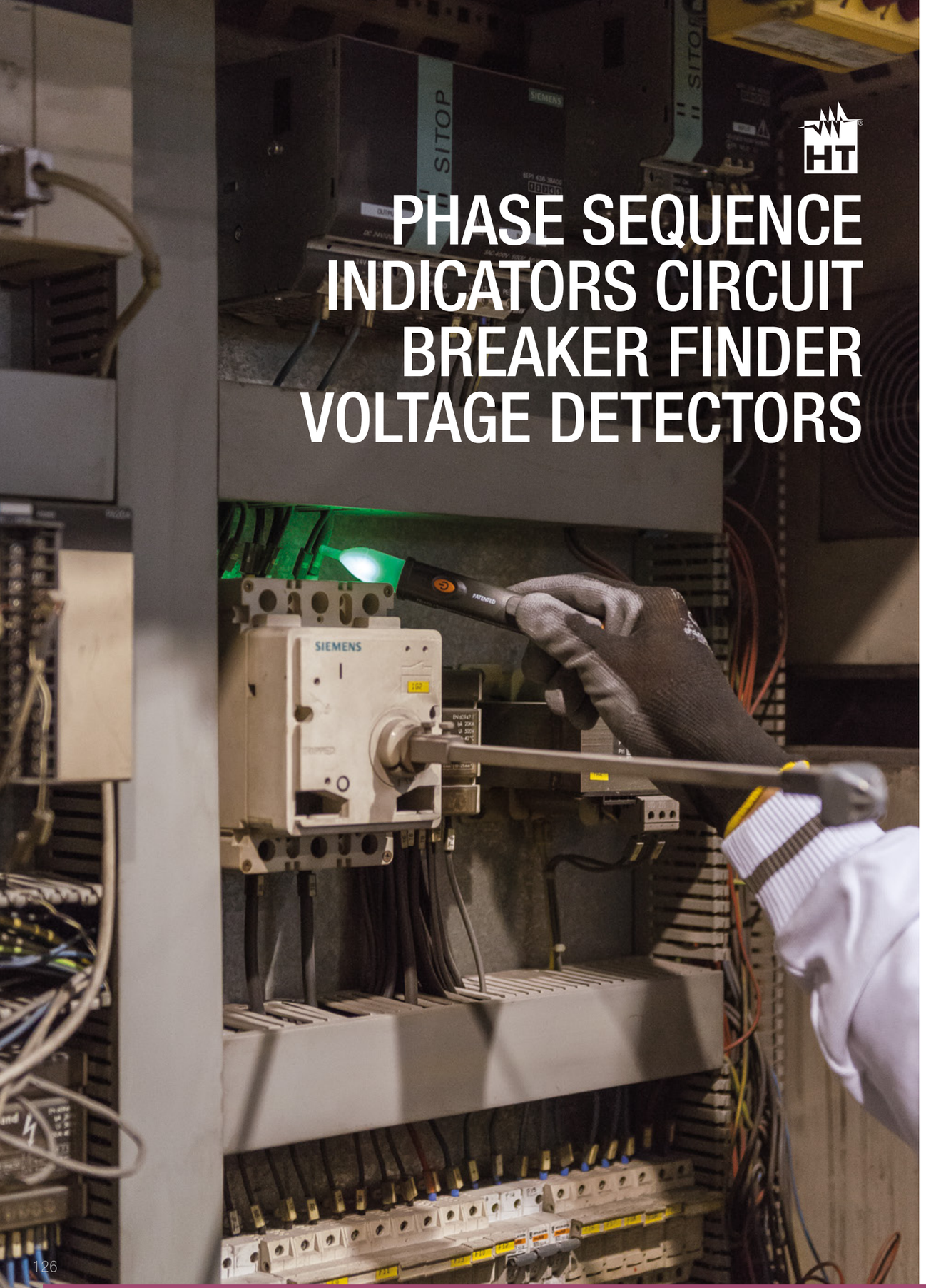
Mechanical adapter + fastening screw
Rubber protection ring
Rubber terminals in different shapes
Reflecting band
Soft carrying bag
Batteries
User manual

Main features

Meas. range of speed without contact:	10.00 ÷ 99999 rev/min
Meas. range of speed without contact:	20.00 ÷ 29999 rev/min
Resolution:	0.01 ÷ 1rev/min
Accuracy:	±(0.04%reading + 2digits)
Meas. range of events counter:	0 ÷ 99999
Response time:	0.7s (>60 rev/min)
Distance from target:	50 ÷ 300mm
Display:	LCD, 5 digits, 99999 dots
AutoPowerOFF:	after 30min
Power supply:	4x1.5V batteries A
Size (LxWxH):	172x63x36 mm
Weight (batteries included):	approx 190g

Optional accessories

KITHT2234N	Set of rubber spare parts + reflecting band + fastening screw



PHASE SEQUENCE INDICATORS CIRCUIT BREAKER FINDER VOLTAGE DETECTORS

PHASE DETECTORS, SWITCH DETECTORS AND PHASE SEQUENCE INDICATORS

MAIN MEASUREMENTS	LINESPLITTER	HT82	HT70	HT20S	HT38	HT5
Measuring range	0÷240VAC 0÷16A 50÷60Hz	40÷600VAC 15÷400Hz	100÷1000VAC 50÷60Hz	100÷1000VAC 50÷60Hz	200÷250VAC 50Hz	60÷250VAC 50÷60Hz
Localization of protection devices	-	-	-	-	•	-
Detection of AC voltage without contact also on insulating sheaths	-	-	•	•	-	-
Indications “R” and “L” on the display to measure phase sequence	-	•	-	-	-	-
Phase sequence and phase concordance without contact also on insulating sheaths	-	-	•	-	-	-
LED and sound indications	-	-	•	•	•	•
Network voltage (L-N, L-PE, N-PE)	•	-	-	-	-	-
Absorbed phase current	•	-	-	-	-	-
Absorbed phase current multiplied by 10 (for low-power users)	•	-	-	-	-	-
Leakage current on protection conductor	•	-	-	-	-	-
Leakage current measured in differential mode (L-N)	•	-	-	-	-	-
ADDITIONAL MEASUREMENTS						
Test of neon-filled lamps	-	-	-	-	-	•
Test of internal gas of compact fluorescent lamps	-	-	-	-	-	•
Test of internal gas of energy-saving lamps	-	-	-	-	-	•
Test of internal gas of high and low-pressure sodium-vapor lamps	-	-	-	-	-	•
Test of internal gas of halogen lamps	-	-	-	-	-	•
Test of internal gas of mercury-vapor lamps	-	-	-	-	-	•
Phase detection function with contact for AC voltage 60-250V 50/60Hz	-	-	-	-	-	•
Continuity test on non-electronic starters/reactors	-	-	-	-	-	•
Diode test	-	-	-	-	-	•
ADDITIONAL CHARACTERISTICS						
LCD display	-	•	-	-	-	-
Sound indications with buzzer	-	-	•	•	•	•
Practical breast pocket holder	-	-	•	•	-	-
Anti-shock protection sheath	-	•	-	-	-	-
Integrated torch	-	-	-	•	-	•
Schuko plug	•	-	-	-	•	-
Measurement category	CAT II 240V	CAT III 600V	CAT IV 1000V	CAT IV 1000V	CAT III 250V	CAT II 300V
Reference standard for safety	IEC/EN61010-1, IEC/EN61010-02-030	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1	IEC/EN61010-1
Power supply	240VAC (±10%) 50/60Hz	From mains	2x 1,5V AAA	2x 1,5V AAA	From mains (HT38T) 1x 9V (HT38R)	1x 9V
Size (LxWxH) (mm)	210x60x35mm	130x69x22	160x26x20	160x26x20	95x60x30	255x60x40
Weight in grams	385g	130g	48g	48g	140g	170g
Order code	**HA000951**	**HA000156**	**HR000070**	**HR000296**	**HR000038**	**HA000138**

ORDER CODE ***HA000951***

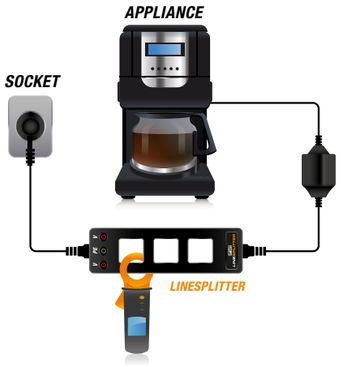
LINESPLITTER

CONDUCTOR SPLITTER

LINESPLITTER is an indispensable accessory every time you need to measure the current/power absorption or leakage current of a single-phase load supplied from socket (max 16A). **This accessory separates the active conductors and the protective conductor, thus making the following measuring spots directly accessible to suitable instruments (clamp meters, clamps for measuring leakage currents, wattmetric clamps, mains analyzers):**

- Mains voltage (L-N, L-PE, N-PE)
- Absorbed phase current
- Absorbed phase current multiplied by 10 (for low-power users)
- Leakage current on protection conductor
- Leakage current measured in differential mode (L-N)

In particular, the comparison between the readings obtained in the two last measuring spots, **also allows evaluating whether the leakage current flows to alternative paths to the protective conductor** (e.g.: current leaked in water or in the metal tubes of a boiler, immersion pump, etc.).



Functions

- Separation of phase conductor L from conductors N and PE on 2-pole and 3-pole cables
- Simple AC voltage measurement (L-N, L-PE, N-PE) through clamps/multimeters
- Simple AC current measurement through external clamps
- Current loop x1 for a direct measurement of AC current
- Current loop x10 for a direct measurement of low AC currents
- Direct measurement of leakage current on PE cable
- Indirect measurement of leakage current on L and N cables
- Use for loads with maximum current absorption 16A

Main features

Power supply:	240VAC (±10%) 50/60Hz
Connection to mains:	In-built Schuko plug, length 50cm
Connection to user:	In-built Schuko socket
Output current:	max 16A
Safety:	IEC/EN61010-1, IEC/EN61010-02-030
Measurement category:	CAT III 240V
Size (LxWxH):	210x60x35mm
Weight (batteries included):	385g

Accessories provided

User Manual

CAT III 600V

ORDER CODE ***HA000156***

HT82

PHASE SEQUENCE

HT82 is a mobile device to display the **phase sequence** with **3 terminals** in a generic **three-phase** system. The device provides an **“R” indication** in case of **correct phase sequence** or **“L” indication** in case of **incorrect phase sequence**.

KIT82 Kit of 3 cables + 3 alligator clips.

Functions

- Indications “R” and “L” on the display to measure phase sequence

Main features

Power supply:	from power 40V ÷ 600V / 15-400Hz
Display:	LCD display
Pollution level:	2
Safety:	IEC/EN61010-1
Measurement category:	CAT III 600V
Size (LxWxH):	130x69x22mm
Weight (batteries included):	130 g

Included accessories

KIT82	Set of 3 cables + 3 alligator clips
	Bag and user manual

Optional accessories

404-IEC#	Measuring lead with safety cap, diameter 4mm
5004-IEC#	Insulated alligator clip (20A) for 4mm banana cables
5001-#	Cable with 4mm banana-banana connector, 1.5m long

CAT IV 1000V

YouTube

ORDER CODE ***HR000070*** | ***HR000296***

HT70 | HT20s

VOLTAGE DETECTOR WITH MEASUREMENT OF PHASE SEQUENCE (HT70)

HT70 is a practical innovative device capable of carrying out, further to the **phase detection function**, a **phase sequence** and **phase conformity test** with **LED** indications and **buzzer**, also on the **insulating sheath of the conductors**. The result of the test is indicated by the **red LED** (**incorrect phase sequence**) or the **green LED** (**correct phase sequence**) turning on, by simply moving the sensor first on the L1 and then on the L2 phase. HT20s is instead the model dedicated only to **searching live cables**. Also carries out measurements on insulating sheath of cables and therefore **without direct contact with live parts**.

Step1 - Take HT70 and rest it on the assumed phase L1 of the three-phase system (on the conductor or sheath) for **at least 5s** and wait for the **red LED** to flash together with the buzzer sounding.

Step2 - Now rest and keep HT70 on the assumed phase L2 (on the conductor or sheath) for **at least another 5s** and wait for the **LED** to flash together with the buzzer sounding.

Step3 - If the **green LED** turns on with steady light, phase sequence is **correct**. If, however, the **red LED** flashes, phase sequence **is incorrect**.

Functions

	HT70	HT20s
AC voltage detection	•	•
Led and buzzer indication	•	•
Battery check with LED indication	•	•
Phase sequence detection	•	-
Pocket clip	•	•

Main features

AC reference voltage:	100V ÷ 1000V to earth
Frequency:	50/60Hz
Power supply:	2x1.5V alkaline batteries type AAA NEDA24A LR03
Pollution level:	2
Safety:	IEC/EN61010-1
Measurement category:	CAT IV 1000V
Size (LxWxH):	160x26x20mm
Weight (batteries included):	48 g

Included accessories

Battery
User manual

CAT III 600V

ORDER CODE ***HR000038***

HT38

CIRCUIT BREAKER FINDER

HT38 belongs to that category of instruments (not necessarily meters) that make the job easier for all engineers that need to **detect reference switches** in power lines. The instrument consists of two elements: HT38T which, once plugged in, generates a signal and a receiver HT38R, that recognizes the signal, **indicates the reference switch via a LED and a sound**.

Functions

- LED visual indication and sound signalling with variable tone
- Location of security devices
- Use in circuits with voltage up to 250VAC to ground
- low battery level LED signalling
- Auto Power OFF

Included accessories

HT38T Transmitter
HT38R Receiver
Battery (receiver)
Transport bag
User manual

Main features of HT38T

Power supply:	230VAC, 50Hz
Max signal output current:	<20mA
External connection:	integrated Schuko Europlug plug
Operating temperature:	0°C ÷ 40°C (32°F ÷ 104°F)
Operating humidity:	<80%RH
Storage temperature:	0°C ÷ 50°C (32°F ÷ 122°F)
Storage humidity:	<95%RH
Dimensions (L x P x H):	95x60x30mm
Weight:	140 g

Main features of HT38R

Safety:	IEC/EN61010-1
EMC:	IEC/EN61326-1
Insulation:	double insulation
Pollution Level:	2
Measurement category:	CAT III 250V
Max operating altitude:	2000m

CAT II 300V

YouTube

ORDER CODE ***HA000138***

HT5

VOLTAGE DETECTOR WITH TEST OF GAS-FILLED LAMPS

Model HT5 is a practical mobile device for **quickly carrying out tests on the operation of low-pressure**, **sodium-vapor -pressure** and **high-pressure internal gas lamps**, by simply touching the lamp's surface. Other available characteristics are the **phase detector function**, **Continuity test** and **Diode test**.

Functions and characteristics

- Operation test of neon and fluorescent tubes
- Operation test of neon lamps with E27 coupling
- Operation test of sodium-vapor lamps
- Operation test of halogen lamps
- Phase detector function for AC voltage 60-250V 50/60Hz
- Continuity test with buzzer
- Diode test
- LED indications and sound notifications
- Integrated torch

Main features

Power supply:	1x9V batteries type IEC 6F22
Safety:	IEC/EN61010-1
Measurement category:	CAT III 300V
Size (LxWxH):	255x60x40mm
Weight (batteries included):	170g

Included accessories

Batteries
User manual

LAN TESTERS

DEVICES FOR LAN NETWORK VERIFICATION

NEW

QUICKLAN6055

QUICKLAN6050N

MAIN MEASUREMENTS		
Wire mapping of LAN cables	•	•
Test on twisted pair cables RJ45 type UTP, STP and FTP	•	•
Test on telephone cables with RJ11 connector	-	•
Verification on COAX cables	-	•
Errors of open pairs	•	•
Errors of shorted pairs	•	•
Errors of reversed pairs	•	•
Errors of crossed pairs	•	•
Errors of split pairs	•	•
Generic errors (MISWIRE)	•	•
Measurement of cable length	-	•
Cable length measuring range	-	1÷255m

ADDITIONAL CHARACTERISTICS		
Display indication of error type	•	•
Test indication **OK** - **NOT OK**	•	•
Remote unit recognition	•	•
AutoPowerOFF	•	•
Backlight	•	•
Low battery indication	•	•
Power supply	1x 9V	6x 1.5V AAA
Size (LxWxH) (mm)	128x67x39	156x73x35
Weight in grams (batteries included)	165	170
Order code	**HV006055**	**HV006050**

ORDER CODE ***HV006055***

QUICKLAN6055

MOBILE DEVICE
FOR CABLE TESTS IN LAN NETWORKS

Model **QUICKLAN6055** is capable of **detecting and indicating** on the display the presence of **incorrect connections on LAN network cables** (**exchanged**, **split**, **inverted**, **open**, **short-circuited** pairs, etc., both of type **UTP** (unshielded) and of type **STP** (shielded). This device **is provided with more remote units** and is capable of **recognizing further ones** (optional) in order to create an efficient **localization action on different spots within a patch panel**, carrying out tests very quickly **with the aid of a single operator**. QUICKLAN6055 is the ideal solution for **any installer who needs a simple and efficient device** to carry out preliminary checks and verifications on **installations of LAN networks** (**also of PoE** type) with connectors of type **RJ45**.

Functions

- Cable mapping in LAN networks
- Test on twisted pair cables RJ45 type UTP, and STP
- Errors of open pairs
- Errors of short-circuited pairs
- Errors of exchanged pairs
- Errors of inverted pairs
- Errors of split pairs
- Generic errors (MISWIRE)
- Display indication of error type
- Indication of test passed/failed
- Remote unit recognition: 8
- AutoPowerOFF
- Low battery indication

Main features

Protection against voltage (PoE):	max 24V
Size (LxWxH):	190x65x45mm
Weight (battery excluded):	235g
Size of remote unit (LxLaxH):	30x25x27mm
Remote unit weight:	13g
Considered standard:	TIA/EIA 568B

Included accessories

CH1, CH2	Remote units #1 and #2
YAAMS0000000	Patch cable STP RJ45-RJ45, 20cm, 3 pieces
	Carrying bag
	User Manual
	Battery

Optional accessories

REM3	Remote unit #3 + patch cable RJ45-RJ45 STP
REM4	Remote unit #4 + patch cable RJ45-RJ45 STP
REM5	Remote unit #5 + patch cable RJ45-RJ45 STP
REM6	Remote unit #6 + patch cable RJ45-RJ45 STP
REM7	Remote unit #7 + patch cable RJ45-RJ45 STP
REM8	Remote unit #8 + patch cable RJ45-RJ45 STP
REM38	Remote unit #3 - #8 + 6 patch cables RJ45-RJ45 STP

ORDER CODE ***HV006050***

QUICKLAN6050N

PORTABLE DEVICE FOR VERIFICATION OF
LAN NETWORK CABLES AND LENGTH MEASUREMENT

Model **QUICKLAN6050N** is capable of **detecting and indicating on the display** the presence of **incorrect connections on LAN network cables** (**exchanged**, **split**, **inverted**, **open**, **short-circuited,** pairs, etc.) both of type **UTP** (unshielded) and of type **STP** (shielded) with connector **RJ45, RJ11** and **Coax F.** The device is provided **with more remote units** and is capable of **recognizing further ones** (**of type RJ45**) in order to create an efficient **localization action on different spots inside a patch panel,** carrying out tests very quickly with the aid of a single operator. QUICKLAN6050N also **measures the length of the single pairs of the cable**.

Functions

- Test of wiring errors on LAN network cables with RJ45 connector in CAT5 and CAT6
- Test of wiring errors on telephone network cables with RJ11 connector
- Test of wiring errors on COAX cables with F connector
- Detection of wiring errors on UTP (unshielded) and STP (shielded) cables
- Detection of up to 4 remote units for multiple tests.
- Measurement of cable length from 10m to 250m
- Backlight
- Auto Power OFF

Main features

Input connectors:	RJ45, RJ11, COAX F
Power supply:	6x1.5V batteries type AAA LR03
Size (LxWxH):	156x73x35mm
Weight (battery included):	170g
Size of rem. unit (LxLaxH):	72x20x23mm
Remote unit weight:	25g

Included accessories

RT-01	Remote unit RJ45 #1 + 2 patch cables RJ45 STP, 20cm
RT-RJX1	Remote unit RJ11/COAX + patch cable RJ11 + patch cable COAXF
	Carrying bag
	Batteries
	User Manual

Optional accessories

RT-0204	Set of remote units RJ45 #2, #3, #4 + 3 patch cables RJ45 STP 20cm

INFRARED CAMERAS

INFRARED THERMAL CAMERAS

Simply
advanced.

Capacitive touch screen extra-bright

Interchangeable optics Optional equipment

Laser pointer

Optical thermal camera in visible range

Integrated Flash LED

Up to 3 independent pointers

Preset selection properties of materials

Multi-areas with independent pointers

50 hz
Fluid image also on moving targets

384x288
160x120
80x80
32x31
pixel
High resolution for sharp images

P.i.P. fusion Overlapping visual + thermo-graphic image

HDMI™ micro USB B UNIVERSAL SERIAL BUS
PC USB 2.0 connection HDMI video output Data saving on MicroSD card

Wi Fi™
THT45 Use with the **THTview***** App for iOS™ and Android™ systems

Temperature range –20°C + 400°C

Automatic adjustment of SPAN

0,06 °C
Higher thermal sensitivity

Rechargeable batteries and battery chargers

IR
Recording of of IR videos

Voice notes

Text notes

Industrial, electrical or construction. Excellent in any sector.

The new THT range makes use of a highly **innovative technology** to deliver **performance at affordable prices**.
The use of IR technology today applies to many sectors, from industry to construction, from systems to installation. Thanks to the **innovative icon display**, the wide **capacitive touch screen display** and the very high **infrared resolution** with 384x288 pixels and 160x120 pixels (80x80 pixels for THT45), identifying those problems which are not visible to the naked eye becomes simpler and more intuitive.
The new THT thermal cameras are provided with Flash Led*, Laser pointer*, photo-camera for visual images and PiP* and optional interchangeable optics**. With the provided 4GB memory card, with which you will be able to take hundreds of pictures, it will be possible to prepare **reports complete with images**, **audio and text comments**. With the new THT thermal cameras, **thermographic analysis** will be **simple and quick**.

* THT70, THT60 and THT45. ** Only THT60 and THT70. *** The THTview App is available for free download in the Apple Store™ and Google Play™ store.

INFRARED THERMAL CAMERAS

CHARACTERISTICS OF IR IMAGE	THT70	THT60	THT46	THT45W	MERCURY	THT33	THT32
IR sensor resolution	384 x 288	160 x 120	160 x 120	80 x 80	80 x 80	80 x 80	32 x 31
Temperature range	-20 ÷ 400°C -4 ÷ 752°F	-20 ÷ 400°C -4 ÷ 752°F	-20 ÷ 350°C -4 ÷ 662°F	-20 ÷ 350°C -4 ÷ 662°F	- 20 ÷ 260°C - 4 ÷ 500°F	- 20 ÷ 380°C - 4 ÷ 716°F	-20 ÷ 300°C -4 ÷ 572°F
Thermal sensitivity	< 0.06°C @ 30°C	< 0.08°C @ 30°C	< 0.1°C @ 30°C	< 0.1°C @ 30°C	< 0.1°C @ 30°C	< 0.1°C @ 30°C	< 0.15°C @ 25°C
NETD	< 60mK	< 80mK	< 100mK	< 100mK	< 100mK	< 100mK	< 150mK
Spectrum range	8 ÷ 14µm	8 ÷ 14µm	8 ÷ 14µm	8 ÷ 14µm	8 ÷ 14µm	8 ÷ 14µm	6.5 ÷ 14µm
IFOV (@1m)	1.14mrad	3.33mrad	2.78mrad	3.78mrad	4.86mrad	4.53mrad	-
Type of IR sensor	UFPA	UFPA	UFPA	UFPA	UFPA	UFPA	UPC
Frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	9Hz

CHARACTERISTICS OF IR OPTICS AND BUILT-IN PHOTO CAMERA							
Field of view (FOV)	24.6° X 18.6° (provided optics)	29.8° X 22.6° (provided optics)	25° X 19°	17° X 17°	21° X 21°	21° X 21°	38° X 38°
Focus width of standard lens	22mm	7.5mm	9mm	9mm	7,5mm	7,5mm	-
Focusing of IR optics	Manual	Manual	Manual	Manual	Fixed	Fixed	Fixed
Resolution and FOV of visual camera	640 x 480pxl, FOV 62.3°	640 x 480pxl, FOV 62.3°	1.3Mpxl, FOV 59°	1.3Mpxl, FOV 59°	-	-	320 x 240pxl
Interchangeable optics	•	•	-	-	-	-	-

FUNCTIONS							
Fusion PiP function for combination of thermal and visual images	•	•	•	•	-	-	• (Blending)
3 cursors: Central, Min, Max.	•	•	•	•	•	•	•
Advanced analysis: Spots, Lines, Areas on images and Isotherm line function	•	•	-	-	-	-	-
Correction according to distance, reflected temperature and relative humidity	•	•	• Only reflected temperature	• Only reflected temperature	-	-	• Only reflected temperature
Colour palettes	• 8 standard	• 8 standard	• 4 standard	• 4 standard	• 5 standard	• 5 standard	• 5 standard
Integrated table with emissivity values of common materials	•	•	•	•	-	-	-
Alarm thresholds on temperature measurement	•	•	-	-	-	-	•
Readings in °C, °F, °K	•	•	•	•	•	•	•
Class 2 laser pointer	•	•	•	•	•	-	-
Integrated white light illuminator	•	•	•	•	•	•	-
Digital zoom	1x ÷ 20x	1x ÷ 20x	1x ÷ 32x	1x ÷ 32x	-	-	-
Manual and automatic span	•	•	•	•	Auto only	•	Auto only
Vertical and horizontal lines	•	•	-	-	-	-	-

DATA SAVING	THT70	THT60	THT46	THT45W	MERCURY	THT33	THT32
Standard format of saved images JPEG	•	•	•	•	• (BMP)	• (BMP)	• (BMP)
Saving of IR videos and audio comments in MPEG4 format	•	•	•	•	-	-	-
Voice and text annotation	•	•	-	-	-	-	-

ADDITIONAL CHARACTERISTICS							
Capacitive touch-screen colour display	•	•	-	-	-	-	-
Power supply with rechargeable battery	•	•	•	•	•	•	•
USB interface to PC and THTLink software	•	•	•	•	-	-	• (No software)
PAL/NTSC video output	•	•	• HDMI	• HDMI	-	-	-
WiFi function for connection to mobile devices	-	-	-	• *with APP THTview*	-	-	-
Bluetooth function for connection to mobile devices	-	-	-	-	• *with APP HTMercury*	• *with APP HTMercury*	-

POWER SUPPLY							
Battery type	rechargeable Li-ION 7,4V 2700mAh	rechargeable Li-ION 7,4V 2700mAh	rechargeable Li-ION 3,7V 2000mAh	rechargeable Li-ION 3,7V 2000mAh	rechargeable Li-ION 7,4V 2300mAh	rechargeable Li-ION 3,7V 1300mAh	rechargeable Li-ION 3,7V 1400mAh
Recharging system	On thermal camera or external recharging base	On thermal camera or external recharging base	On thermal camera	On thermal camera	External recharging base	On thermal camera (USB/ power supply)	On thermal camera
Duration	4.5 hours	4.5 hours	4 hours	4 hours	2 hours	5 hours	2 hours
External power supply	External power supply 100/240VAC (50/60Hz)/12VDC	External power supply 100/240VAC (50/60Hz)/12VDC	External power supply 100/240VAC (50/60Hz)/5VDC	External power supply 100/240VAC (50/60Hz)/5VDC	External power supply 100/240VAC (50/60Hz)/10VDC	External power supply 100/240VAC (50/60Hz)/5VDC	External power supply 100/240VAC (50/60Hz)/5VDC

GENERAL CHARACTERISTICS							
Operating temperature	-20°C ÷ 50°C	-20°C ÷ 50°C	-15°C ÷ 50°C	-15°C ÷ 50°C	5°C ÷ 40°C	-10°C ÷ 45°C	0°C ÷ 50°C
Operating humidity	10% ÷ 90%HR	10% ÷ 90%HR	10% ÷ 90%HR	10% ÷ 90%HR	<80%RH	<80%RH	10% ÷ 90%HR
Storage temperature	-40°C ÷ 70°C	-40°C ÷ 70°C	-40°C ÷ 70°C	-40°C ÷ 70°C	-20°C ÷ 60°C	-20°C ÷ 60°C	-20°C ÷ 60°C
Storage humidity	10% ÷ 90%HR	10% ÷ 90%HR	10% ÷ 90%HR	10% ÷ 90%HR	<80%RH	<80%RH	10% ÷ 90%HR
Ingress protection	IP65 in compliance with IEC529	IP65 in compliance with IEC529	IP50 in compliance with IEC529	IP50 in compliance with IEC529	IP65 in compliance with IEC529	IP54 in compliance with IEC529	IP42 in compliance with AIEC529
Shock	25G, in compliance with IEC60068-2-29	25G, in compliance with IEC60068-2-29	25G, in compliance with IEC60068-2-29	25G, in compliance with IEC60068-2-29	-	-	-
Vibrations	2G, in compliance with IEC60068-2-6	2G, in compliance with IEC60068-2-6	2G, in compliance with IEC60068-2-6	2G, in compliance with IEC60068-2-6	-	-	-
Falling test	2m	2m	2m	2m	-	2m	-
Size (L x W x H)	243x103x160mm	243x103x160mm	224x77x96mm	224x77x96mm	190x75x55mm	180x60x75mm	205x155x62mm
Weight (battery included)	0.92kg	0.92kg	0.5kg	0.5kg	0.55kg	0.26kg	0.4kg
Order code	**HN000070**	**HN000600**	**HN000046**	**HN000045**	**HR000MER**	**HN000033**	**HN000032**

384x288 pixel

160x120 pixel

YouTube

THT70 384x288pxl

ORDER CODE ***HN000070*** / ***HN000600***

THT70 | THT60

ADVANCED INFRARED THERMAL CAMERA WITH TOUCH SCREEN WITH RESOLUTION 384x288pxl (THT70) AND 160x120pxl (THT60)

THT70 and THT60 are professional thermal cameras provided with an IR sensor with **high resolution 384x288pxl (THT70) and 160x120 (THT60)** which make them suitable both for use in **industrial environments** and in the **construction sector**, thus allowing them to be used for **energetic certification tests**. Their peculiarity is their **internal icon structure** with a **capacitive colour touch-screen display with high brightness**. It is possible to save thermal and visual images in standard JPG format in the internal memory or on the appropriate Micro-SD card and **transfer data onto the PC** through the **USB** interface. It can be used to record **IR videos**. THT70 and THT60 have a **wide temperature range (max. 400°C)** thanks to which it is possible to carry out **advanced analyses** including **spots**, **lines**, **areas** and **isotherm lines** on **every image.** Thermal cameras are the ideal solution for **detecting electric problems**, **checking mechanical parts**, **analyzing hydraulic systems**, **forced ventilation**, etc. Thermal cameras are completed and made particularly performing by the possibility of using **optional interchangeable optics**, the **Flash LED** and the **laser pointer**. In order to make thermographic analyses more immediate, these thermal cameras have been provided with the technology **Picture in Picture** (possibility of **overlapping thermographic** and **visual images**), with the **SPAN** function **(creation of a temperature range of interest)** and with the **automatic setting of emissivity** with a **preset table of materials**. Finally, with the **provided software THTLink** it is possible to **analyze IR photos**, **change colour palettes**, prepare advanced reports and much more.

Functions and characteristics

	THT70	***THT60***
Characteristics of IR image		
IR sensor resolution	384x288pxl 25µm	160x120pxl 25µm
Temperature range	-20°C a 400°C	
Thermal sensitivity	< 0,06° @ 30°C	< 0,08° @ 30°C
NETD	< 60mK	< 80mK
Spectrum range 8÷14µm	•	•
IFOV (@1m)	1.14mrad	3.33mrad
Type of sensor IR UFPA	•	•
Frequency 50Hz	•	•
Characteristics of IR and integrated optics		
Field of view (FOV)	24.6° x 18.6° (lens 22mm)	29.8° x 22.6° (lens 7.5mm)
Focal length of standard lens	22mm	7.5mm
Manual focusing of IR optics	•	•
Integrated photo-camera resolution	640x480pxl	
Functions		
Fusion PiP function	•	•
3 cursors: Central, Min, Max.	•	•
Advanced analysis (Line, Areas, Spots)	•	•
Correction functions (%RH, Distance)	•	•
Availabe palettes	8 standard + 10 custom	
Integrated table with emissivity values of common materials	•	•
Alarm thresholds	•	•
Readings in °C, °F, °K	•	•
Class 2 laser pointer	•	•
Integrated white light illuminator	•	•

	THT70	***THT60***
Data saving		
Standard format of saved images	JPEG	JPEG
Saving of IR videos in MPEG4 format	•	•
Voice and text annotation	•	•
Additional characteristics		
Capacitive touch-screen colour display	•	•
Power supply with rechargeable battery	•	•
USB interface to PC	•	•
PAL/NTSC video output	•	•

Included accessories

	Optics 22mm f/1.0 ***(THT70)*** Optics 7,5 mm f/1.0 ***(THT60)***
	Micro SD Card 4GB
BAT7X	Rechargeable Li-ION battery (2x)
	USB cable for PC connection and Video cable
A007X	AC/DC power supply + universal plugs
	Headset with microphone
	User manual on CD-ROM + Quick guide for use
VA6070	Rigid Carrying case
BRC7X	Recharging base
TRIPO7X	Adapter for tripod
SSHIELD7X	Sun screen
THTLink	Windows software
	ISO9000 calibration certificate

Optional accessories

RL-11-70	Optional optics 11mm ***(THT70)***
RL-38-70	Optional optics 38mm ***(THT70)***
RL-11-60	Optional optics 11mm ***(THT60)***
RL-22-60	Optional optics 22mm ***(THT60)***
RL-33-60	Optional optics 33mm ***(THT60)***

160x120 80x80 pixel

YouTube

THT45W 80x80pxl

THT46 160x120pxl

ORDER CODE ***HN000046*** / ***HN000045***

THT46 | THT45W

COMPACT INFRARED THERMAL CAMERAS WITH FUNCTION PiP

THT45W and **THT46 are an absolute innovation** in the sector of thermal cameras, both for the **advanced performance** typical of a high-level thermal camera and for their **reduced size**. THT45W is provided with IR sensor with resolution **80x80pxl** which makes it the ideal device for maintenance operations and **everyday analysis**. THT46, which a resolution of **160x120pxl**, has an even more advanced performance which allows a **better definition of the infrared image**. They are provided with an **LCD colour display** with **high brightness** and by a drop-down menu **very easy to use**, which allow for a **simple programming** by means of a keypad. The temperature range is very wide **(-20°C at 350°C)** and it is possible to save both **thermal images** and **visual images** in a standard JPG format on a **micro SD card**. IT is also possible **to transfer data onto the PC via USB**. Recording of **IR videos** is also available. Thermal cameras THT45W and THT46 are the **ideal partner** for **detecting** electric problems, checking mechanical parts, analyzing hydraulic systems, forced ventilation, etc. These thermal cameras are completed by the **SPAN** function (creation of a temperature range of interest) and the **automatic setting of emissivity** with a preset table of materials.

Functions and characteristics

	THT46	***THT45W***
IR image features		
IR sensor resolution	160x120pxl/25µm	80x80pxl/34µm
Temperature range -20°C a 350°C	•	•
Thermal sensitivity < 0,1° @ 30°C	•	•
NETD: < 100mK	•	•
Spectral range 8÷14µm	•	•
IFOV (@1m)	2.78mrad	3.78mrad
Sensor type IR UFPA	•	•
Frequency 50Hz	•	•
IR and integrated optical system features		
Field of view	25° x 19°	17° x 17°
Standard lens focal length 9 mm	•	•
Manual IR optical system focus	•	•
Functions		
PiP Fusion function to mix thermal images with visual images	•	•
3 cursors: Central, Min, Max.	•	•
Reflected temperature correction	•	•
4 color palettes	•	•
Integrated emissivity table of common materials	•	•
Readout in °C, °F, °K	•	•
Laser pointer Class 2	•	•
Built-in white light lamp	•	•
Data saving		
Images saved in standard JPEG format	•	•
Saving IR video and audio in MPEG4 format	•	•

	THT46	***THT45W***
Additional features		
Powering with rechargeable battery	•	•
USB port for PC connection	•	•
HDMI output	•	•
WiFi connection for communication with mobile devices	-	• through THTview

Included accessories

	Micro SD Card 8GB
BAT45N	Rechargeable Li-ION battery
	USB cable for PC connection
	HDMI Video Cable
A0045U	Universal Mini USB adapter + AC/DC plug
	Headset with microphone
	User manual on CD-ROM + quick guide
B45	Soft bag for transport
THTLink	Windows software
	Calibration certificate ISO9000

32 x 31 pixel

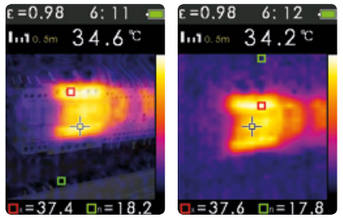
YouTube

ORDER CODE ***HN000032***

THT32

COMPACT INFRARED CAMERA WITH 32X31PXL IR RESOLUTION AND PIP FUNCTION

THT32 is the entry level **thermal imaging camera** for anyone who wants to enter the world of thermographic inspection for the first time.
The device is extremely simple and features an intuitive menu that allows you to set up measurement solutions till now available only on expensive equipment. For example, **you can read all maximum or minimum temperature values by choosing to display on display either a visual image or an infrared image**. The images can be saved and opened later.
An interesting feature of THT32 is the ability to gradually mix the visual image with the infrared image **(PiP)**. That's why it represents a handy solution for everyone. Last but not least, THT32 is equipped with a **rechargeable battery**, via **Mini USB**, to charge the battery in any condition (Network, PC, Car).



PiP function

Only infrared image

Functions and features

IR image features
- IR sensor resolution: 32x31pxl
- Temperature range: -20°C ÷ 300°C
- Thermal sensitivity: <0.15°C @ 25°C
- NETD: <150mK
- Spectral range: 6.5 ÷ 14µm
- IFOV (@1m):
- IR sensor type: UPC
- Frequency: 9Hz

IR and integrated optical system features
- Field of view (FOV): 38°x 38°
- Standard lens focal length:
- Focus: automatic

Functions
- Fusion (Blendings) function with adjustable distance
- 3 cursors: Central, Max, Min
- Object emissivity adjustable from 0.10 to 1.00
- Reflected temperature correction
- 5 color palettes
- Readout in °C, °F
- Automatic read lock (HOLD)

Data saving
- Saved images in BMP format
- Save to micro SD card (max 6000 images)

Additional features
- Powering with rechargeable battery
- USB port

Included accessories

BAT32	Rechargeable Li-ION battery
	Battery charger power supply
	USB cable
	Tripod
	Transport bag
	Micro SD card 4GB + reader
	User manual

80 x 80 pixel

COD. METEL ***HN000033***

THT33

INFRARED THERMAL CAMERA WITH RESOLUTION 80x80 AND BLUETOOTH CONNECTION

Model THT33 is a thermal camera with **reduced size** provided with IR sensor with resolution **80x80pxl**, which makes it the ideal device for maintenance operations and **everyday analysis**. THT33 has an **LCD colour display** and a **very simple** menu which allows for a **simple programming**. The temperature range is very wide **(-20°C to 380°C)** and it is possible to save **thermal images** in a BMP format in the internal memory, or to transfer the captured snapshots to mobile devices through the dedicated APP **HTMercury** using the Bluetooth connection. Within the APP, it is possible to carry out advanced analyses and create PDF reports which can be shared by mail and/or via social networks. Thermal camera THT33 **is the ideal solution** for **detecting** electric problems, checking mechanical parts, analyzing hydraulic systems and forced ventilation systems.

App HT Mercury33

Funzioni e caratteristiche

Characteristics of IR and integrated optics
- Field of view (FOV): 21°x 21°
- Automatic focusing

Functions
- 3 cursors: Central, Max, Min
- Emissivity adjustable from 0.10 to 1.00
- 5 colour palettes
- Reading in °C, °F
- HOLD function

Data saving
- BMP format of saved images
- Saving in the internal memory (max 20 images)
- Download of images to mobile devices via Bluetooth and APP HTMercury

Additional characteristics
- Power supply with rechargeable Li-ION battery
- USB interface for battery recharge
- Built-in white-light torch
- Automatic/Manual temperature span
- D/S ratio: 74:1

Characteristics of IR image
- Resolution of IR sensor: 80x80pxl
- Temperature range: -20°C ÷ 380°C
- Thermal sensitivity: <0.1°C @ 30°C
- NETD: <100mK
- Spectrum range: 8 ÷ 14µm
- Type of IR sensor: UFPA
- Frequency: 50Hz

Included accessories

Built-in rechargeable Li-ION battery
Battery charger power supply
USB cable for battery recharge
Carrying bag
Non-slip strap
User Manual
ISO9000 calibration certificate

THERMOMETERS AND THERMO-ANEMOMETERS

THERMOMETERS AND THERMO-ANEMOMETERS

NEW

MAIN MEASUREMENTS	HTA103	HTA105	HTA106	HTA107	HT3320	HT3300	HT3302	HT3305
Distance / infrared spot ratio	-	-	-	8:1	50:1	12:1	12:1	20:1
Infrared temperature measuring range	-	-	-	-50 ÷ 200°C -58 ÷ 392°F	-50 ÷ 1000°C -58°F ÷ 1832°F	-50 ÷ 380°C -58 ÷ 716°F	-30 ÷ 500°C -22°F ÷ 932°F	-50°C ÷ 1000°C -58°F ÷ 1832°F
Temperature measuring range with K-type probe	-250 ÷ 1372°C -418 ÷ 2502°F	-	-	-	-200 ÷ 1370°C -328 ÷ 2498°F	-	-	-50°C ÷ 1370°C -58°F ÷ 2498°F
Temperature measurement with K-type probes	• (*)	-	-	-	• (*)	-	-	• (*)
Measurement of volumetric capacity (m3/s) and enthalpy (kW)	-	•	-	-	-	-	-	-
Measurement of air relative humidity in %RH	-	•	•	• (and materials)	•	-	-	-
Measurement of wind speed in m/s	-	• (hot-wire sensor)	-	-	-		-	-
Integrated photo-camera (640x480pxl)	-	-	-	-	•	-	-	-
Image saving in JPG format	-	-	-	-	•	-	-	-
Video saving in 3GP format	-	-	-	-	•	-	-	-
Measurement of air temperature/humidity with built-in sensor	-	•	•	•	•	-	-	-
Temperature measurement of dew point and of wet bulb	-	-	•	•	•	-	-	-
Datalogger function for temperature measure recording	-	-	-	-	•	-	-	-
ADDITIONAL CHARACTERISTICS								
Emissivity adjustment of target	-	-	-	Fixed >0.95	•	Fixed >0.95	•	0.01 ÷ 1.00
Setting of alarm thresholds on measurements	-	-	-	•	•	•	•	•
Continuous measurement	-	-	-	-	•	-	-	-
Class 2 integrated laser pointer	-	-	-	•	•	•	• (Class 3R)	•
Blue LED built-in illuminators for UV function	-	-	-	-	-	-	•	-
Internal memory	-	-	-	•	•	-	-	-
SD Card slot for measure saving	-	-	-	-	•	-	-	-
PC connection through USB cable	-	-	-	-	•	-	-	-
Backlight	•	•	•	•	•	•	•	•
Autorange	•	•	•	•	•	•	•	•
Data HOLD	•	•	•	•	•	•	•	•
MAX/MIN/AVG	• (MAX/MIN)	• (MAX/MIN)	• (MAX/MIN)	• (MAX/MIN)	•	• (MAX/MIN)	•	•
Selection of measuring unit	•	•	•	•	• °C \ °F	• °C \ °F	• °C \ °F	• °C \ °F
Low battery indication	•	•	•	•	•	•	•	•
Auto Power OFF	•	•	•	•	•	•	•	•
Power supply	1x9V 6F22	1x9V 6F22	1x9V 6F22	1x9V 6F22	Rechargeable battery	1x9V 6F22	3x1,5V AA	2x1.5V AAA
Size in mm (LxWxH)	185x60x40	185x60x40	185x60x40	185x60x40	205x155x62	136x75x40	185x104x54	180x105x55
Weight in grams (batteries included)	180	180	180	180	410	140	380	240
Order code	**HN000103**	**HN000105**	**HN000106**	**HN000107**	**HA000179**	**HA003300**	**HA003302**	**HA003305**

* With optional TK probes (TK101 is provided).

ORDER CODE ***HN000107*** / ***HN000106*** / ***HN000105*** / ***HN000103***

HTA107 | HTA106 | HTA105 | HTA103

MULTIFUNCTION DEVICES FOR MEASURING ENVIRONMENTAL PARAMETERS

The family of devices HTA10x including models HTA103, HTA105, HTA106 and HTA107 has been designed for measuring **environmental parameters** such as **temperature**, **humidity** and **air speed**. Model **HTA103** (thermometer) allows measuring **temperature** with the use of **JKT thermocouples in the air**, **in contact** and within **liquids** (with optional probes TK1xx). Model **HTA105** (thermo-anemometer) measures a**ir speed with an in-built hot-wire telescopic probe**, further to **temperature/humidity** and **air volumetric flow rate**. Model **HTA106** (thermohygrometer) measures air **temperature/humidity with the in-built sensor**. Model **HTA107** (multifunction thermohygrometer) allows measuring **air humidity** and **contact measurement** on materials with **internal sensors** and with the **provided penetration probe**. This device also allows the **infrared measurement of temperature** and **the calculation of the temperature difference in order to establish condensation conditions on surfaces**. Each model is provided with **display backlight** in order to make readings in poorly lit environments easier.

Functions

	HTA107	***HTA106***	***HTA105***	***HTA103***
IR temperature	•	-	-	-
Temperature with KJT probes	-	-	-	•
Air temperature/humidity with in-built probe	•	•	•	-
Contact humidity	•	-	-	-
Air speed with hot-wire sensor	-	-	•	-
Air volumetric flow rate (CMM, CFM)	-	-	•	-
Dew point temperature	•	•	-	-
Wet bulb temperature	-	•	-	-
Data HOLD	-	•	•	•
MAX/MIN	•	•	•	•
Average value	-	-	•	
Autorange	•	•	•	•
Backlight	•	•	•	•
Internal memory	•	-	-	-
Auto Power OFF	•	•	•	•

Main features

Display:	LCD, 4 digits (double display)
Power supply:	1x9V battery type 6F22
Auto Power OFF:	after 15 minutes' idling
Internal memory:	Max 20 locations ***(HTA107)***
Max operating altitude:	2000m

Technical Specifications

	HTA107	***HTA106***	***HTA105***	***HTA103***
Temperature with K-type probe				
Measuring range:	-	-	-	-250°C ÷ 1372°C -418°F ÷ 2502°F
Basic accuracy:	-	-	-	±(1%reading + 0.5°C) ±(1%reading + 0.9°F)
Air temperature / humidity				
Measuring range:	-28°C ÷ 77°C -20°F ÷ 170°F 0%RH ÷ 100%RH	-20°C ÷ 60°C -4°F ÷ 144°F 0%RH ÷ 100%RH	0°C ÷ 50°C 32°F ÷ 122°F 0%RH ÷ 100%RH	-
Basic accuracy:	±2°C / ±3.6°F	±1°C / ±1.8°F	±1°C / ±1.8°F	-
Infrared temperature (IR)				
Measuring range:	-50°C ÷ 200°C -58°F ÷ 392°F	-	-	-
Basic precision (@ 0 ÷ 50°C):	±1%rdg or 0.6°C	-	-	-
Emissivity:	0.95 (fixed)	-	-	-
Optical resolution:	D:S = 8:1	-	-	-
Air speed				
Measuring range:	-	-	0.10m/s ÷ 20.00m/s	-
Basic accuracy:	-	-	±(5%rdg + 0.03)	-
Resolution:	-	-	0.01m/s	-

ORDER CODE ***HA000179***

HT3320

PROFESSIONAL INFRARED VIDEO THERMOMETER

HT3320 is a mobile digital **video thermometer** provided with **integrated digital photo-camera** capable of measuring **temperature with no need for contact** with any target object, using their reflected infrared radiation, with a very quick performance of measurements. Measurements are carried out with high precision thanks to the integrated laser pointer and an **optimum Distance / Spot** ratio of **50:1**. The device can **save**in its **internal memory** or on external **micro SD card** JPG images and short **3GP videos** which correspond to the value of the measured IR temperature. It is possible to record temperature values with **programmable time intervals**. Each test result can be **downloaded onto the PC** with no need for any additional software, by simply connecting the device through the provided **USB** cable. Further measurements carried out by the device are **temperature/ humidity of air** with internal sensor, **dew point/wet bulb temperature** and temperature with use of **k-type thermocouples**. HT3320 allows setting **MAX** and **MIN** alarm thresholds on the whole measuring range, with the activation of a **buzzer** in case they are exceeded. A comfortable LCD display with backlight makes it easy to read even in critical environments.
The auto power off function allows the device to preserve its internal battery when not in use.

Functions and characteristics

- Infrared temperature measurement from -50° to 1000°C
- Integrated photo-camera (640x480pxl)
- Distance / Spot ratio 50:1
- Saving of images in JPG format and videos in 3GP format.
- Air temperature/humidity measurement with in-built sensor
- Temperature measurement of dew point and wet bulb
- Temperature measurement by means of external K-type probe
- Datalogger function for temperature measure recording
- Internal memory and external SD Card for measure saving
- Emissivity adjustment, double laser pointer, continuous measurement
- Selection between measuring unit °C and °F
- Setting of Hi and Lo alarm thresholds on measurements
- Data HOLD, MAX/MIN/DIF/AVG functions
- PC connection through USB cable
- **Display: 2.2” (320x240pxl), backlight colour LCD display**
- **Power supply: 1x3.7V 1400mAh Li-ION battery**
- **Battery duration: approx. 4 hours in continuous operation**
- **External power supply: 100-240VAC 50/60Hz / 5VDC**
- **Auto Power OFF: programmable 3, 15, 60min, can be disabled**
- **Internal memory: 70MB (50kB/image; video 3.1MB/min)**
- **External memory: micro SD card (max 8GB)**
- **Operating temperature: 0°C to 50°C**
- **Operating and storage humidity: <90%HR**
- **Size (LxWxH): 205x155x62mm**
- **Weight (battery included): 410g**

Technical Specifications

Infrared temperature measurement
- Measuring range °C: -50° ÷ 1000°C
- Measuring range °F: -58° ÷ 1832°F
- Resolution: 0.1°C / 0.1°F
- Basic accuracy: ± (1%reading + 1.0°C), ± (1%reading + 1.8°F)

Temperature measurement with K-type probe
- Measuring range °C: -50 ÷ 1370°C
- Measuring range °F: -58 ÷ 2498°F
- Resolution: 0.1°C / 0.1°F
- Basic accuracy: ± (0.5%reading + 1.5°C), ± (0.5%reading + 2.7°F)

Included accessories

TK101	K-type wire probe
BAT32	Rechargeable Li-ION battery
	Battery charger power supply, USB cable
	Tripod, Transport case and User manual

ORDER CODE ***HA003302***

HT3302

INFRARED THERMOMETER WITH LASER RETICLE PROJECTION

The model HT3302 is a portable digital thermometer that performs contactless **temperature measurements** on any object extremely fast.
The measurements are carried out with great precision thanks to the **integrated laser pointer** and and an optimal **Distance/ Measurement Spot ratio of 12:1**.
An interesting feature of this instrument is the **indication, projected onto the surface tested, of the exact area to be measured**.
Very often, when using this kind of equipment (i.e. equipped with laser pointer), it is incorrectly considered that the measured area is exactly that indicated by the laser pointer.
HT3302 is extremely easy to use with a **Joystick** that enables quick selection of internal functions.
The auto power off function allows the instrument to preserve the internal battery when the device is not used.

Functions

- Infrared temperature measurement up to 500° C
- Integrated laser pointer
- Laser pointers for instant location of distance/measurement spot
- Automatic read lock (HOLD)
- Auto Power OFF
- Distance/Measurement spot Ratio D:S = 12:1
- Measurements in °C/°F
- Object emissivity adjustable from 0.10 to 1.00
- Backlight LCD
- Built-in white LED lights
- Integrated blue LED lights with UV function
- Measurements of MAX, MIN, MAX-MIN, AVG values
- Upper (HIGH) and lower (LOW) alarm threshold settings
- Joystick for quick selection of internal functions
- Modern ergonomic design

Included accessories

Batteries
Transport bag
User manual

Main features

Laser Pointer:	Class 3R (according to EN60825-1:2014)
UV Pointer:	Group 1 (according to IEC62471)
Max operating altitude:	2000m
Safety:	IEC/EN61010-1
Vibrations:	2.5 g in accordance with IEC60068-2-6, 10÷200Hz
Shock:	50 g in accordance with IEC60068-2-27, 11ms
Drop test:	1.2m (4ft)
Display:	5-digit backlight LCD
Power supply:	3x1.5V alkaline battery type AA LR06
Battery life:	approximately 20 hours (laser and backlight on)
Auto Power OFF:	after 5 minutes of inactivity
Dimensions (L x P x H):	185 x 104 x 54mm
Weight (batteries included):	380g

Technical specifications

Infrared temperature measurement
- Reading range °C: -30° ÷ 500°C
- Reading range °F: -22° ÷ 932°F
- Resolution: 0.1 °C - 0.2 °F
- Standard accuracy: ±1.5°C o ±1.5%reading
- Response time: <500ms
- Spectral sensitivity: 8 ÷ 14µm
- D/S ratio: 12:1
- Emissivity range: 0.10 ÷ 1.00

ORDER CODE ***HA003305*** | ***HA003300***

HT3305
HT3300

ULTRA-COMPACT INFRARED THERMOMETERS

Handy and extremely practical systems for reading infrared temperature with a laser system, providing visual and audio indications every time the measured value changes. **HT3305** also allows performing **temperature measurements with a K-type probe**. These models were thought for very quick measurements to detect, with no loss of time, temperature variations.

Functions

	HT3300	***HT3305***
Infrared temperature measurement	-50°C÷380°C	-50°C÷1000°C
Built-in laser pointer	•	•
Laser pointer area for an immediate localization of distance/spot	•	•
Automatic reading lock (HOLD)	•	•
Auto Power OFF	•	•
Distance / Spot ratio D:S	12:1	20:1
Temperature measurement with K-type probe	-	•
Adjustment of emissivity	- (>0.95)	•
Measures in °C/°F	•	•
Data HOLD	•	•
MAX, MIN, AVG functions	•	•
Acoustic alarm for values higher than MAX and lower than MIN	•	•
Backlight	•	•
Auto Power OFF	•	•
Ergonomic and ultra-compact design	•	•

Included accessories

- Batteries
- K-type wire probe ***(HT3305)***
- Transport bag
- User manual

Main features

Laser pointer: Class 2
Display: LCD with backlight
Power supply: 1x9V battery type 6F22 ***(HT3300)***
2x1.5V batteries type AAA LR03 ***(HT3305)***
Auto Power OFF: after 10 seconds' idling
Size (L x W x H): 136×75×40mm ***(HT3300)***,
180×105×55mm ***(HT3305)***
Weight (batteries included): 140g ***(HT3300)***,
240g ***(HT3305)***

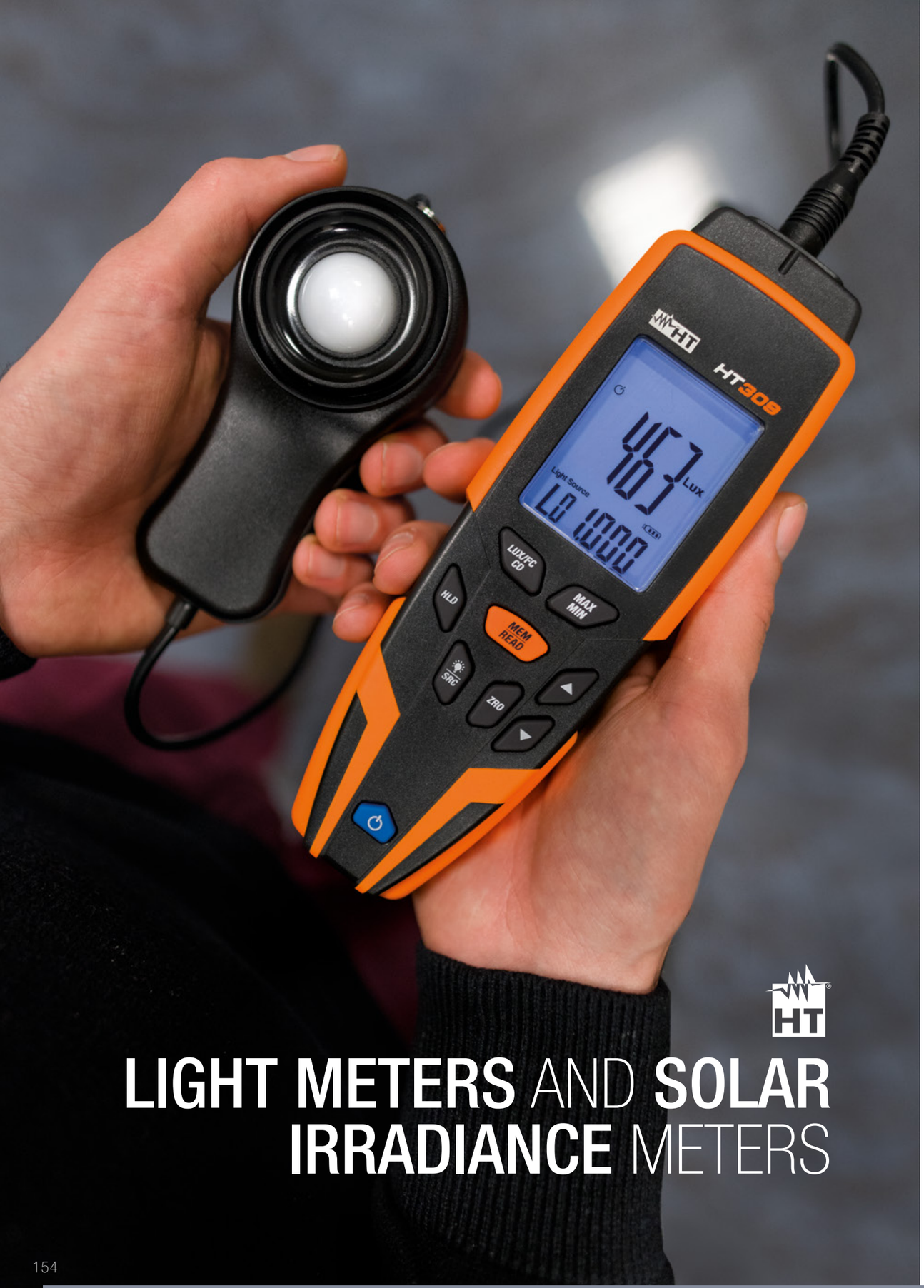
Technical specifications

Infrared temperature measurement

- Measuring range °C: -50°C ÷ 380°C ***(HT3300)***;
  -50°C ÷ 1000°C ***(HT3305)***
- Measuring range °F: -58°F ÷ 716°F ***(HT3300)***;
  -58°F ÷ 1832°F ***(HT3305)***
- Resolution: 0.1 °C - 0.1 °F
- Basic accuracy: ±1°C or ±1%reading
- Response time: <150ms
- Spectrum response: 8 ÷ 14µm
- D/S ratio: 12:1 ***(HT3300)***; 20:1 ***(HT3305)***
- Emissivity range: 0.95 fixed ***(HT3300)***; 0.01 ÷ 1.00 ***(HT3305)***

Temperature measurement with K-type probe *(HT3305)*

- Measuring range °C: -50°C ÷ 1370°C
- Measuring range °F: -58°F ÷ 2498°F
- Resolution: 0.1 °C - 0.1 °F
- Basic accuracy: ±0.5% rdg (only device without probes)
- Response time: <150ms



LIGHT METERS AND SOLAR IRRADIANCE METERS

LIGHT METERS AND SOLAR METERS

HT309

HT204

MAIN MEASUREMENTS	LIGHT METERS	SOLAR METERS
Measuring range	0.01÷400klux 0.01÷40kFc	1÷1999W/m² 1÷634 BTU/(ft2*h)
Measurement of illuminance in Lux/Fc	•	-
Measurement of LED sources' illuminance	•	-
Luminous intensity measurement (Cd)	•	-
Solar irradiation measurement W/m² and BTU/(ft2*h)	-	•
ADDITIONAL CHARACTERISTICS		
Internal memory for measured data saving	• (Max 99 locations)	-
Zeroing	•	•
Manual measuring range	-	•
Autorange	•	-
Data HOLD	•	•
MAX/MIN/AVG	•	• No AVG
Selection of measuring unit	•	W/m² - BTU/(ft2*h)
Auto Power OFF	•	-
Reference standard	Class A JIS C 1609:1993, CNS 5519	-
Power supply	1x 9V	1x 9V
Size (LxWxH) (mm)	185x60x40	130x55x38
Weight (batteries included):	180g	150g
Order code	**HA003090**	**HA000157**

ORDER CODE ***HA003090***

HT309

MOBILE DIGITAL LIGHT METER

Model **HT309** is a **digital light meter** for measuring illuminance up to **400kLux** through a silicon photodiode sensor. This model also allows measuring **illuminance of LED sources** with **various colours** by setting the **relevant correction factors**, **measuring luminous intensity** (expressed in Candles) and **saving results in the internal memory**.

Functions and characteristics

- Measuring range of Illuminance (Lux/Fc): 0.01÷400kLux; 0.01 ÷ 40kFc
- Luminous intensity measurement (Cd)
- Measurement of LED sources' illuminance
- Basic accuracy: ±3%reading
- Zeroing: Digital
- Autorange
- Spectrum response correction
- Data HOLD, MAX/MIN: also AVG
- Internal memory
- Auto Power OFF
- Reference standard: Classe A JIS C 1609:1993 + CNS 5119

Included accessories

Soft carrying bag
Test certification
Battery
User Manual

ORDER CODE ***HA000157***

HT204

PORTABLE SOLAR METER

HT204 is a **digital solar irradiance meter** for measurements of **solar irradiation** up to **2000W/m²**, which can be used as an inspection device, typically in **photovoltaic installations**.

Functions and characteristics

- Measuring range: 1÷1999W/m² 1÷634 BTU/(ft2*h)
- Resolution: 1W/m² 1BTU/(ft2*h)
- Accuracy: > between 10 W/m² and 5%reading
  > between 1BTU/(ft2*h) and 5%reading
- Selection of the measuring unit: W/m² and BTU/(ft2*h)
- Zeroing: Manual with trimmer
- Manual change of scale
- Data HOLD / MAX/MIN

Included accessories

Transport case
CE declaration of conformity
Battery
User Manual

SOUND LEVEL METERS

NEW

HT157

HT155

HTA102

	CLASS 1		CLASS 2
Device category (Class)	Class 1	Class 1	Class 2
Noise measuring range	25 ÷ 140dB	25 ÷ 140dB	30 ÷ 130dB
Noise measurement resolution	0.1 ÷ 0.01dB	0.1dB	0.1dB
Frequency range	10kHz ÷ 20kHz	10kHz ÷ 20kHz	31.5kHz ÷ 8kHz
Dynamic range	90dB	90dB	50dB
Measurement of sound pressure level (SPL)	•	•	•
Measurement of equivalent noise levels (Leq)	•	•	-
Frequency weighting	A/C/Z	A/C/Z	A/C
Integration over time	Fast/Slow/Impulse	Fast/Slow/Impulse	Fast/Slow
Integration with programmable period	•	•	•
Peak measurements (Peak-, Peak+)	•	•	-
Display of MAX/MIN values of SPL	•	•	•
Statistic analysis of noise with “A” weighting	•	•	-
SPL analysis in 24H	•	•	-
Spectrum analysis with octave-band filter (1/1)	• 19Hz ÷ 16kHz	-	-
Spectrum analysis with 1/3 octave-band filter	•	-	-
Mobile calibrator provided	• Class 1	• Class 1	• Class 2
Manual calibration with trimmer	•	•	•
Precise calibration with internal procedure	•	•	-
Pre-polarized “1/2” condenser microphone	•	•	•
AC and DC analogue outputs with 3.5mm jack	• AC only	• AC only	•
Internal memory for data saving	128	128	•
Recalling of results on the display	•	•	-
Mini-USB interface for PC connection	•	•	•
Transfer of saved data onto USB Pen Drive	•	•	-
Windows software for saved data analysis	•	•	•
Display	LCD 240 x 160	LCD 240 x 160	LCD 4 digits
Display backlight	•	•	•
Power supply	4x 1.5V AA	4x 1.5V AA	1x 9V
Provided external power supply	•	•	•
Reference standards	IEC61672 Class 1 IEC61620 Class 1	IEC61672 Class 1	IEC61672 Class 2
Size (LxWxH) (mm)	285x90x39	285x90x39	255x60x40
Weight in grams (batteries included)	500	500	265
Order code	**HN000157**	**HN000155**	**HN000102**

ORDER CODE ***HN000155*** | ***HN000157***

HT155|HT157

DIGITAL INTEGRATING SOUND LEVEL METERS TYPE 1

HT157 and HT155 are mobile integrating sound level meters Type 1 **(Class 1)** which can be used to **monitor** the **equivalent level of nose (Leq)**, measure **Peak values**, check **soundproofing levels**, **acoustic pollution**, etc. they are also indicated for **certification according** to the **laws** currently in force as regards **environmental noise measurements** and in **working environments**. These devices have a **wide measuring range (from 25 to 140dB)** and **multiple functions** such as **statistic analysis, 24H analysis, integration of Leq over time** , which are indispensable elements when measuring. These models also allows carrying out **detailed analyses of spectrum components of noise** using integrated **octave-band filters** and **1/3 octave-band filters** (only HT157) and they are provided with an **internal memory** to **save data** and with a **USB interface** for **transferring data to the PC** through **dedicated software** in a Windows environment with **possibility of numerical**, **graphic** and **statistic** display.

Sound level meters are provided with a practical and **resistant case** with a mobile calibrator for preliminary checks before each measurement is carried out.

ORDER CODE ***HN000102***

HTA102

PROFESSIONAL SOUND LEVEL METER TYPE 2 WITH RECORDING FUNCTION

HTA102 is a professional digital precision sound level meter, the ideal solution to carry out common inspection checks on **environmental noise**, verification of **soundproofing levels**, **acoustic pollution**, etc.
This model allows performing real-time measurements of sound pressure level (SPL) with A/C frequency weighting and integration in Fast/Slow time, and the recording of quantities via PC connection through dedicated software.
Sound level meter HTA102 comes in a **practical carrying case** with all of the accessories necessary for measurements.

Functions and characteristics

	HT155	***HT157***
Sound level meter category	Tipo 1	Tipo 1
Noise measuring range	25÷140dB	25÷140dB
Noise measuring resolution	0.0÷10.1dB	0.0÷10.1dB
Dynamic range	> 90dB	> 90dB
Measurement of sound pressure level (SPL)	•	•
Measurement of equivalent noise levels (Leq)	•	•
Frequency weighting	A / C / Z	A / C / Z
Integration over time	F/S/ Impulse	F/S/ Impulse
Peak measurements (Peak-, Peak+)	•	•
Statistic analysis of noise type "A"	•	•
24H analysis of noise	•	•
Octave-band spectrum analysis	-	•
1/3 octave-band spectrum analysis	-	•
1/2 condenser microphone	•	•
Analogue AC output	•	•
Internal calibration in Class 1	•	•
Provided mobile calibrator	•	•
Internal memory for data saving	(128 groups)	(128 groups)
Interface with USB Pen Drive	•	•
USB interface for PC connection	•	•

Main features

Display:	LCD, dot-matrix (240x160pxl) with backlight
External power supply:	Adapter 100-240VAC/5VDC
Internal power supply:	4x1.5V alkaline batteries type AA LR6
Reference standards:	IEC 61672:2002 type1 IEC 61260:1995 type1 ***(HT157)*** IEC 60804:1985 type1 IEC 60651:1979 type1DLgs 477/91, 195/06
Size:	285x90x3
Weight (batteries included):	500 g

Included accessories

HT151	Mobile calibrator Class 1
	Power supply 100-240VAC/5VDC with USB output
	Mini-USB/USB cable for PC connection
	USB Pen Drive (TRASCEND JF V30/2GB)
	USB cable for connecting the Pen Drive to the device
	Wind protection 60mm
	Windows software for data transfer
	Transport case
	4x1.5V alkaline batteries type A LR06
	User manual, Calibration certificate of sound level meter and calibrator

Funzioni e caratteristiche

- Sound level meter category: Type (Class) 2
- Measuring range: 30 ÷ 130dB
- Noise measurement resolution: 0.1dB
- Dynamic range: 50dB
- Measurement of sound pressure level (SPL)
- A and C frequency weighting
- Integration over time: Fast / Slow
- Display of MAX / MIN values of SPL
- Recording of parameters from software
- 1/2 inch condenser microphone
- Analogue AC and DC outputs (max 1V)
- Manual calibration with trimmer
- **Display: LCD, 4 digits**
- **Power supply: 1x9V batteries type IEC 6F22**
- **Reference standards: IEC 61672 type 2**
- **Size (LxWxH): 255x60x40mm**
- **Weight (batteries included): 265g**

Accessori in dotazione

Wind protection
Screwdriver for manual calibration of sound level meter
Jack for analogue AC/DC outputs
Rigid transport bag
Battery for sound level meter
External power supply 230V AC / 9V DC
Windows software
User manual for sound level meter
1x9V alkaline battery type IEC 6F22
User Manual

LASER METERS

MAIN MEASUREMENTS	iDM70	DM40
Distance measuring range	0,05 ÷70m	0,05 ÷40m
Measurement of area and volume	•	•
Measurement of heights by indirect method of the Pythagorean theorem	•	•
Measurement of tilt and distance	•	-
Continuous (dynamic) 2-spot and 3-spot measurements	•	•
Partial operations (additions/subtractions) with internal memory	•	•
ADDITIONAL CHARACTERISTICS		
Connection to iOS/Android devices through HTLaserMeter App	•	-
Activation of the laser pointer for measurement	•	•
Setting of measuring reference	•	•
Setting of timer for measurements	•	-
Selection of measuring unit	m - ft	m - ft
Backlight	•	•
Air bubble level	•	-
Hole for tripod insertion	•	-
Activation of buzzer upon key pressing	•	-
Auto Power OFF	•	•
Power supply	2x 1.5V AA	2x 1.5V AAA
Size (LxWxH) (mm)	135x53x30	110x48x28
Weight (batteries included)	160g	135g
Order code	**HA000700**	**HA004000**

ORDER CODE ***HA000700***

iDM70

LASER DISTANCE METER WITH 70M RANGE, INCLINOMETER AND BLUETOOTH INTERFACE FOR CONNECTION TO IOS AND ANDROID DEVICES

Model iDM70 is a professional laser distance meter designed for **measuring distances** between two spots in a simple, quick and efficient manner thanks to the integrated laser pointer. Its **small size** makes it a fully mobile device which can be used in any conditions and for any application (**construction**, **electric**, **do-it-yourself sector**, etc.) in which it is necessary to measure a linear length. This device also allows **calculating areas** and **volumes** and carrying out the **indirect measurement of heights** in **2 spots** and **3 spots** with the use of the **trigonometric method** and the mathematical principle of the **Pythagorean theorem**. The **measurement of the tilt** with respect to the horizontal line, a **timer on measurements** and a **small air bubble level** for a **perfect alignment to the targets** are among the available functions. Management of simple operations with the **internal memory** (sums and subtractions) and the presence of the **backlight function** of the display complete the available functions for the device. The HTLaserMeter App is also available **for free** for **iOS** and **Android** and is capable of **connecting** in **real time** to iDM70 and to carry out **measurements** associated to **pictures** in order to subsequently trace the lines within it.

Functions

- Direct measurement of distance from 0.05m to 70m
- Measurement resolution: 0,001m
- Measurement of area and volume
- Measurement of heights by indirect method of the Pythagorean theorem.
- Measurement of tilt and distance
- Continuous (dynamic) 2-spot and 3-spot measurements
- Activation of the laser pointer for measurements
- Setting of measuring reference
- Setting of timer for measurements
- Selection of the measuring unit in “m” o “ft”
- Partial operations (additions/subtractions) with internal memory
- Connection to iOS/Android devices through Bluetooth
- Air bubble level
- Hole for tripod insertion
- Backlight
- Activation of buzzer upon key pressing
- Auto Power OFF

Main features

Power supply:	2x1.5V alkaline batteries type AA LR06
Duration:	max 8000 measurements
Display:	5-digit LCD display with backlight
Memory:	20 locations + external through App
Interface:	Bluetooth™ compatible with iOS - Android
Mechanical protection:	IP54
Laser pointer:	class 2 according to IEC/EN60825-1
Size (LxWxH):	135x53x30mm
Weight (batteries included):	160 kg

Included accessories

Soft carrying bag, battery and user manual

User manual HT LaserMeter APP

ORDER CODE ***HA004000***

DM40

COMPACT LASER DISTANCE METER WITH 40M MEASURING RANGE

Model DM40 has been designed for **measuring distances** between two spots in a simple, quick and efficient manner thanks to the integrated laser pointer. Its **small size** makes it a fully mobile device that can be used in any conditions and for any application (**construction**, **electric**, **do-it-yourself sector**, etc.) in which it is necessary to measure a linear length. This device also allows **calculating areas** and **volumes** and carrying out the indirect measurement of heights with the use of the mathematical principle of the **Pythagorean theorem**. Management of simple operations with the **internal memory** (sums and subtractions) and the presence of the backlight function of the display complete the available functions for the device.

Functions

- Direct measurement of distance from 0.05m to 40m
- Measurement resolution: 0,001m
- Measurement of area and volume
- Measurement of heights by indirect method of the Pythagorean theorem.
- Continuous (dynamic) measurements
- Activation of the laser pointer for measurements
- Setting of measuring reference
- Selection of the measuring unit in “m” o “ft”
- Partial operations (additions/subtractions) with internal memory
- Backlight
- Auto Power OFF

Main features

Power supply:	2x1.5V alkaline batteries type AAA LR03
Duration:	max 5000 measurements
Display:	5-digit LCD display with backlight
Memory:	20 locations
Mechanical protection:	IP54
Laser pointer:	class 2 according to IEC/EN60825-1
Size (LxWxH):	110x48x28mm
Weight (batteries included):	135 kg

Included accessories

Soft carrying bag

Non-slip strap

Batteries

User Manual

cat_catgen-en2019_1.00

HT ITALIA SRL
Via della Boaria, 40
48018 Faenza (RA)
ITALIA
Tel. **+39 0546 621002**
Fax **+39 0546 621144**
E-mail: **vendite@htitalia.it**
ht-instruments.it

C2AI - HT EN FRANCE
9, Rue de Catalogne
69153 Décines,
FRANCE
Tel. **+ 33 (0)4 72 15 63 89**
E-mail: **ht-instruments@c2ai.com**

ht-instruments.com

HT INSTRUMENTS GMBH
Am Waldfriedhof, 1b
D-41352 Korschenbroich
DEUTSCHLAND
Tel. **+49 (0)2161 564 581**
Fax **+49 (0)2161 564 583**
E-mail: **info@ht-instruments.de**
ht-instruments.de

HT INSTRUMENTS SL
C/ Legalitat, 89
08024 Barcelona
ESPAÑA
Tel. **+34 93 4081777**
Fax **+34 93 4083630**
E-mail: **info@htinstruments.es**
ht-instruments.es