





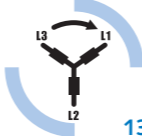
















TEST- & MEASURING EQUIPMENT



EXPLANATION SYMBOLS

1. AC Voltage					
2. LED indication	1	2	3	4	5
3. Hold function					
4. Contact less	6	7	8	9	10
5. Including battery					
6. On/Off switch	11	12	13	14	15
7. Continuity test with acoustic signal					
8. Resistance	16	17	18	19	20
9. Acoustic signal					
10. AC & DC voltage	21	22	23	24	25
11. AC & DC current					
12. Alternating current	26	27	28	29	30
13. Phase rotation					
14. Flashlight	31	32	33	34	35
15. 2/4 mm. probe tips					
16. GS38 Probe tip protection	36	37	38	39	40
17. Magnetism					
18. LCD display	41	42	43	44	45
19. IP protection					
20. (low) Direct current	46	47	48	49	50
21. Direct current					
22. Automatic range setting	51				
23. RMS					
24. True RMS					
25. Frequency measuring					
26. Min-Max Hold Function					
27. Temperature measurement					
28. RS232-port					
29. Max. diameter conductor					
30. Power					
31. COM-port					
32. Leakage current					
33. Adapter output					
34. Insulation resistance					
35. Impedance					
36. Earth leakage switch/RCD					
37. Memory					
38. Earth resistance					
39. Measurement with external current clamp					
40. Infrared port					
41. Analogue display					
42. Power factor					
43. Harmonics					
44. Resistance protection wiring					
45. Keyboard					
46. Differential temperature					
47. Light level					
48. Sound level					
49. Analogue output					
50. Relative Humidity					
51. Non AC Voltage					

Nieaf-Smitt was created by the company Nieaf (Netherlands Instrument and Electrical Apparatus Factory, 1900), producing test- & measurement equipment and Smitt, manufacturer of relays since 1902. Both companies have merged in Nieaf-Smitt in 1984.

Throughout the years, the name Nieaf-Smitt has become well known in the electro-technical industry nationally and internationally. The brand names of the products have strong awareness and preference in the Dutch industry. Nieaf-Smitt spends a significant amount of time and money in developing new products or customising existing products to fit the specific customers applications. Nieaf-Smitt is a market-oriented company with a strong focus on marketing, product development, sales and service. An energetic sales team supports customers and services like helpdesk, repair, calibration and product development.

Nieaf-Smitt has been certified ISO9001:2000 for marketing, sales, development, production, calibration and distribution of measurement- and switch equipment.

Nieaf Instruments means high quality and reliable test- & measurement equipment, focused on the demands in the market.

The range of products contains equipment to test the safety of electrical installations and portable equipment, portable installation & equipment testers, multimeters, current clamps, electrical test equipment and low voltage test & analyse equipment.



Nieaf-Smitt is continuously improving its Nieaf Instruments products. Specifications can change without prior notice. No rights can be taken from specifications in this catalogue. Changes and printed errors reserved.



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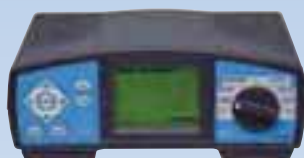
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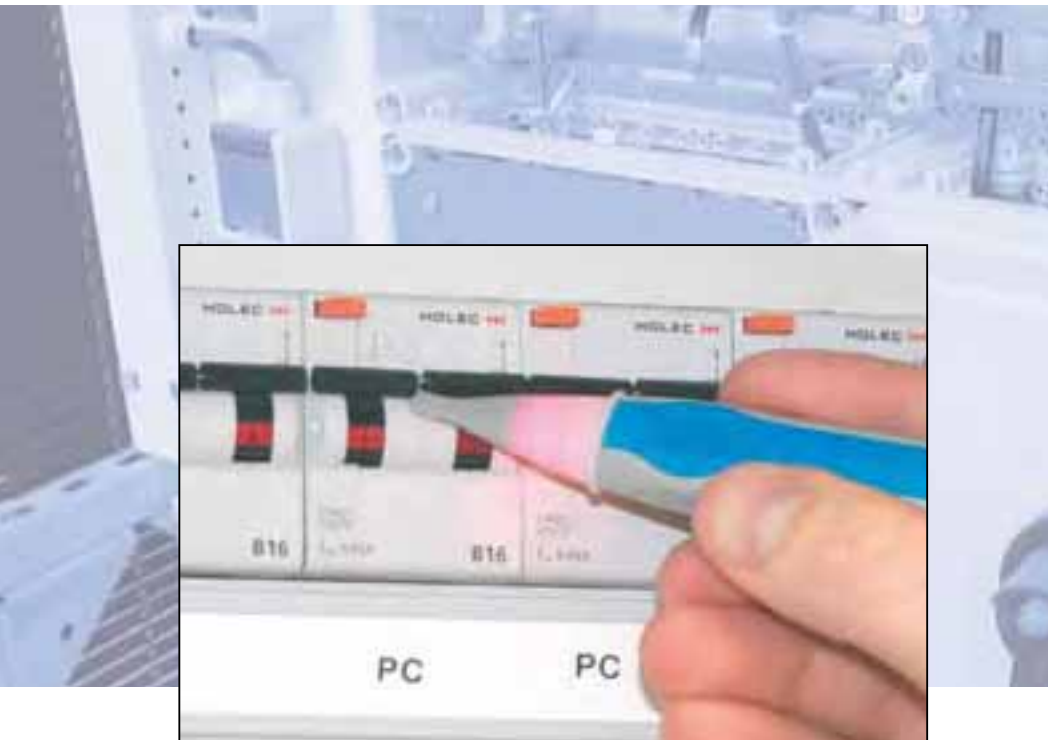
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TEST TOOLS



In many situations, there is a large need for quick detection or measuring of Voltage, current or resistance. For these situations the available Test Tools provide an easy and efficient solution. For safe and quick detection of voltage presence, there are four voltage detectors available.

Approaching a voltage leading part, the voltage detectors will indicate this in several ways. The VoltSpotter will give an optical signal, the VoltBeeper an optical as well as an acoustic signal. The VoltSafe and the VoltPointer are not only instruments for voltage detection but also for non-voltage detection.



The voltage testers within the portfolio offer the ability to measure and indicate the exact voltage. Besides of the AC or DC voltage measurement, the EazyVolt Voltage testers can be used for phase indication, phase rotation and continuity test. The EazyVolt I has a LED-display and the EazyVolt II is equipped with a full LCD display with bargraph.

Unique are the selectable probe tips for 2 or 4 mm. For measuring in conditions with poor lighting, the torch can be used for illumination of the probe tips. The EazyVolt II can also be used for measuring resistance.

The EasyAmp is a versatile electrical tester for measuring current up to 200 A AC. Using simple and quick method, AC currents, AC and DC Voltage and resistance can be measured with the EasyAmp. The tester can also be used for continuity tests. The probes of the tester can easily be stored in the backside of the housing. The LCD display clearly projects all measured values and by using the HOLD button, the values will be fixed.

The EasyPhase is a simple test tool for indication of phase rotation and rotation of motors. The tester is delivered standard including leads, crocodile clamps and vinyl bag.

The EasyTester is a very universal and easy to use fully automatic test tool. The instrument detects and switches automatically to the

quantity to be measured, based on a priority system. The EasyTester can measure AC or DC voltage, AC current or resistance.

The detection of cables and/or plumbing in walls, floors or ceilings is a very complex and expensive matter. The LineSpotter is an easy



tester for not only locating these cables and lines, but it can also detect the location of cable interruptions, determining of individual wire in a bundle of wires and even locating of fuses and assignment to circuits.

VOLTAGE DETECTION

Personal safety is more than ever important during operations to voltage leading parts, electrical installations and appliances. Under no circumstances operations under voltage are permitted. That is why it is important to determine the presence of voltage in advance.

According to the current methods, contact with the voltage leading part must be made to determine the presence of voltage. Most of the time a multimeter or voltage tester is used for this purpose, however this takes a lot of time and it can be hard to gain access. Isolated cables cannot be opened without making contact easily.

To execute this detection safer and quicker, four different contact-less voltage detectors are available in our test tools program. These instruments indicate the presence of voltage without contact. When approaching a voltage leading part the instruments will indicate this in different ways.

The portfolio of voltage detectors contains the following products:

VoltSpotter: A fully automatic detector indicating the presence of voltage by an optical signal. The partly transparent tip of the test tool will illuminate bright red at the detection of phase.

VoltBeeper: An automatic detector with optical and acoustic signals. The VoltBeeper has a red illuminating tip as well as a beeping signal.



VoltSafe: A voltage detector and indicator of non-voltage! Automatically an optical and acoustic signal is given at the presence of voltage, however upon switching on the detector a green LED is illuminated. This means there is no voltage present. At the presence of voltage the green LED will change into the red LED and an acoustic signal is given.

VoltPointer: This detector has the same functions as the VoltSafe, but is also equipped with a bright LED in the tip of the instrument for optimum user convenience. This LED can be switched on separately and can be used as a small flashlight.

The unlimited use of the voltdetectors:

a. Malfunctions or maintenance

Solving a problem is often easier than thought of in advance. To simply detect the presence of voltage beforehand, prevents unnecessary searching in an application or part of an installation. Everyone has heard of completely taken an appliance apart before noticing that the plug was pulled out.

b. Determination of Phase and Neutral (also 3 Phase)

With the help of the voltage detector the location of a Phase can easily be determined. This can be very helpful

with multi core cables, insecure installations or multiphase systems. Also the voltage detector prevents unnecessary damage when connecting delicate electrical equipment.

c. Determination of blown fuses

One of the first points to check at technical malfunction operations is the quality of the fuses. Blown fuses are easily determined by the voltage detectors.

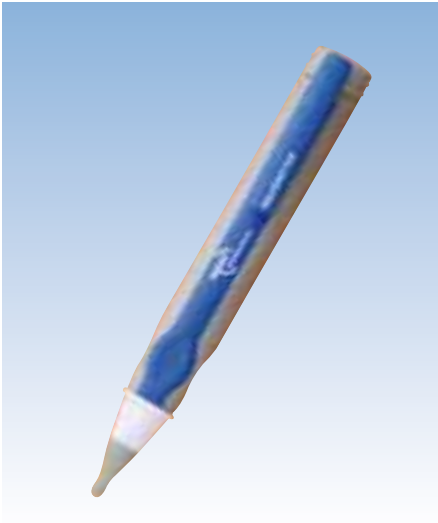
d. Cable breach detection

A cable breach is easily determined by means of a continuity test, whether it is a single or multiple wire cable. Unfortunately the exact location of the breach is not determined. To follow the cable with a voltage detector this point will be located easily, as the tip of the voltdetector will no longer illuminate. With extreme accuracy the location of the breach is determined.

e. Switches On/Off

It is not always shown on the outside of a switch, whether the circuit is activated or not. The voltage detector will illuminate when the circuit is under voltage and when not. This saves energy and provides safe operation.

VOLTSPOTTER



The VoltSpotter, an automatic non-contact voltage detector, will indicate the presence of voltage by an optical signal.

When approaching an AC voltage, the LED in the partly transparent tip of the test tool will illuminate bright red.

With the wide range of 100 – 1000 V AC and the stable technique is determination of phase guaranteed. The VoltSpotter can be used in many service purposes, for detection of cable breach etc.

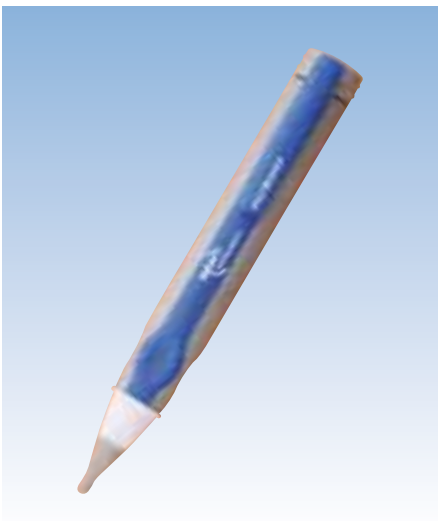
The slim pen size shape makes the VoltSpotter quick and easy in use and storage.



Voltage range	100 – 1000 Volt AC
Power supply	2x AAA, 1.5V battery
IP-Protection	IP64
Overvoltage category	CAT IV / 600V - CAT III / 1000 V
Standard	EN 61010-1
Dimensions	155 x 20 x 16 mm.
Weight	± 45 gram

Art. No.	626 000 660
Packing	per piece in a box
Including	manual, batteries

VOLTBEEPER



The VoltBeeper is a automatic non-contact voltage detector with optical and acoustic signal.

When approaching an AC voltage, the LED in the partly transparent tip of the test tool will illuminate bright red as well as a beeping signal is given. This is very convenient for detection under bright (sunny) circumstances or hidden locations.

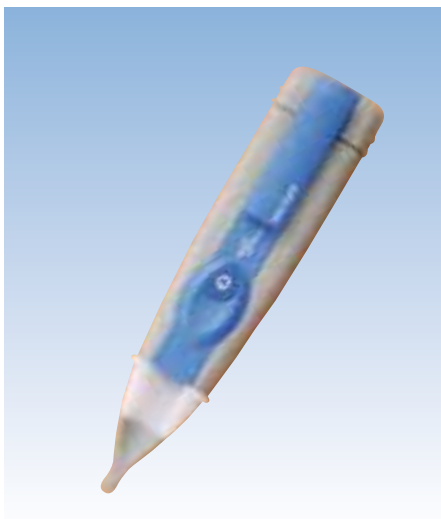
The range of 100 – 1000 V AC makes the VoltBeeper universal applicable. As the acoustic signal is approx. 65 dB, the tester can also be used in industrial surroundings.



Voltage range	100 – 1000 Volt AC
Power supply	2x AAA, 1.5V battery
IP-Protection	IP64
Overvoltage category	CAT IV / 600V - CAT III / 1000 V
Standard	EN 61010-1
Dimensions	155 x 20 x 16 mm.
Weight	± 50 gram

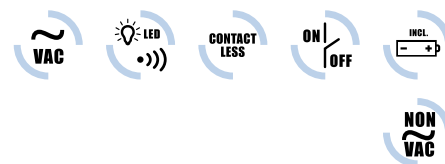
Art. No.	626 000 661
Packing	per piece in a box
Including	manual, batteries

VOLTSAFE



The VoltSafe is a unique instrument, being a voltage detector and non-voltage indicator. The detector is always activated and gives a (red) optical and an acoustic signal upon the presence of AC voltage. The VoltSafe can be set manually to indicate a voltage free surrounding by a green LED in the partly transparent tip. This is a self-test function and indicates no voltage within the detecting range. However if the voltage is detected, the green LED will change to a red LED and an acoustic signal is given.

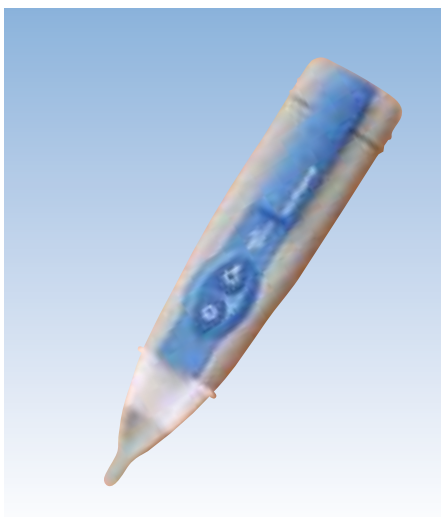
With the range of 100 – 1000 V AC and the acoustic signal of 65 dB, the VoltSafe is a universal instrument and can be used in many service purposes.



Voltage range	100 – 1000 Volt AC
Power supply	2x AAA, 1.5V battery
IP-Protection	IP64
Overvoltage category	CAT IV / 600V - CAT III / 1000 V
Standard	EN 61010-1
Dimensions	128 x 28 x 16 mm.
Weight	± 55 gram

Art. No.	626 000 662
Packing	per piece in a box
Including	manual, batteries

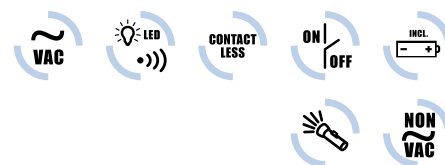
VOLTPOINTER



The VoltPointer has equal functions to the VoltSafe; it is a voltage detector and non-voltage indicator.

The detector is always activated and will automatically give a (red) optical and an acoustic signal upon the presence of voltage. The VoltPointer can be set manually to indicate a voltage free surrounding by a green LED in the partly transparent tip.

Inside the tip of the VoltPointer, a bright LED is positioned that can be switched on manually and used as a (small) flashlight. This makes the VoltPointer very suitable for use in poorly lit locations such as switch boards, distribution boxes etc.



Voltage range	100 – 1000 Volt AC
Power supply	2x AAA, 1.5V battery
IP-Protection	IP64
Overvoltage category	CAT IV / 600V - CAT III / 1000 V
Standard	EN 61010-1
Dimensions	128 x 28 x 16 mm.
Weight	± 60 gram

Art. No.	626 000 663
Packing	per piece in a box
Including	manual, batteries

EAZYVOLT I & II

A Voltage tester is by far one of the most important instruments of an electrician or installer. In the development of the EazyVolt, all-important arguments of end users and all-important values have contributed to the realisation of the instrument. Therefore the EazyVolt is an instrument with multiple functions for every electrician, installer or industrial end user.

Automatic ON/OFF

Both instruments are fully automatic testers. This means that the testers will switch on by activating one of the functions and off in case of no function. The EazyVolt II can also be switched into resistance mode by pushing the resistance button. When no function is activated for 15 seconds, the EazyVolt II will switch off automatically.



Display

The EazyVolt I is integrated with a LED display, showing all functions. For AC/DC voltage indication, the LED's indicate roughly several steps (6, 12, 24, 36, 50, 120, 230, 400, 690). The EazyVolt II is unique by its full LCD display, indicating by bargraph and the exact values. For locations with less lighting, the LCD display is integrated with a backlight.

Selectable probe tips

For measuring in several circumstances and applications, both EazyVolts are equipped with 2 and 4 mm. selectable probe tips which can easily be screwed off.

IP64 (IP65 pending) and dropproof

In order to be able to use the testers in all circumstances and situations, the housing of the EazyVolt I & EazyVolt II is waterproof with an IP64 value. In case the instrument drops, the housing is 1 meter/4 feet drop proof.



Phase indication

In many cases, the location of the phase is unknown. For this situation, both instruments are able to identify the phase location and indicate presence of the phase by LED and beeping.

AC/DC Voltage

Automatically by starting the Voltage measurement, the AC or DC Voltage will be indicated by the instrument. The EazyVolt I indicates the voltage by several LED's (6, 12, 24, 36, 50, 120, 230, 400, 690) and the EazyVolt II gives the exact value (6 ... 690).

Phase rotation

The phase rotation is very important at three phase installations or appliances. Both instruments are able to indicate the phase rotation by using 2 poles.

Continuity

For inspection of cables, resistors, etc. the instruments are integrated with a continuity



function. In case of a proper continuity, the LED will light up and a beeper will go off.

Torch

For measuring in situations with poor lighting, the torch can be used for illumination of the probe tips.

Resistance

The EazyVolt II has an integrated function for measuring resistance up to 2000Ω. Pushing the resistance button on the front of the instrument can activate this function.

Accessories

As an accessory, several bags and a holster are available. This holster (art. no. 626 000 620) is equipped with compartments for storage of screwdrivers, pens or even a phone, beeper or notebook.



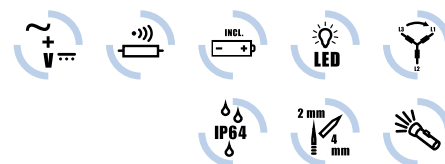
Holster EvH-1 art.no. 626 000 620

EAZYVOLT I



The EazyVolt I is a reliable and safe 3-in-1 automatic voltage tester up to 690 V, a continuity tester and is able to indicate the phase rotation by 2 poles.

The tester is integrated with a torch for testing in places with less lighting. The probe can be connected to the housing firmly.



Voltage range	6 - 690 Volt AC/DC
LED resolution	6, 12, 24 ,36, 50, 120, 230, 400, 690V
Response time	< 0.1 s LED
Phase rotation	2-polg
Continuity	< 200 k Ω
Frequency range	0...65 Hz
Power supply	2 x 1.5V LR03 battery
IP-Protection	IP64/IP65 pending
Over voltage category	CATIII/1000V, CATIV/600V
Standards	EN 61010-1, EN 61243-3, EN 61557-7
Probe tips	2 + 4 mm. with thread
Drop proof	1 meter
Test leads	1,2 m
Dimensions	240 x 56 x 24 mm.
Weight	\pm 230 gram (incl. batteries)

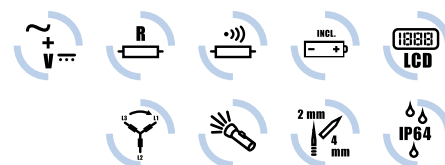
Article number	626 000 600
Packing	per piece in a box
EAN code	-
Including	manual, batteries

EAZYVOLT II



The EazyVolt II is a reliable and safe 4-in-1 automatic voltage tester up to 690 V, a resistance tester, a continuity tester and is able to indicate phase rotation by 2 poles.

Unique is the full LCD display with bargraph and backlight. The tester is integrated with a torch for testing in places with less lighting. The probe can be connected to the housing firmly.



Voltage range	6 - 690 Volt AC/DC
LED resolution	bargraph 8.0 - 150V, res = 0,1V 151 - 690V, res = 1V
Accuracy	\pm (3% +2d)
Response time	< 0.1 s LED/ <0.5s LCD
Resistance measurement	0...2k Ω (\pm 3% +10d)
Continuity	<200 k Ω
Frequency range	0...65 Hz
Backlight	including
Power supply	2 x 1.5V LR03 battery
IP-Protection	IP64/IP65 pending
Over voltage category	CATIII/1000V, CAT IV/600V
Standards	EN 61010-1, EN 61243-3, EN 61557-7
Probe tips	2 + 4 mm. with thread
Drop proof	1 meter
Test leads	1,2 m
Dimensions	240 x 56 x 24 mm.
Weight	\pm 230 gram (incl. batteries)

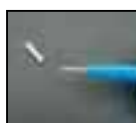
Article number	626 000 610
Packing	per piece in a box
EAN code	-
Including	manual, batteries



Continuity



Voltage testing
in socket



Selectable
probe tips



Resistance
measurement
(EazyVolt II only)

EASYAMP



By using the probes, voltage testing is very easy

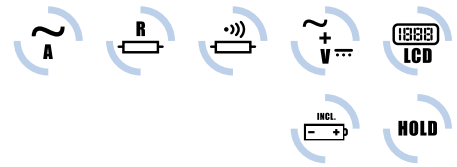
The EasyAmp is a 2-pole voltage tester and a very user-friendly current clamp.

By the open jaw, currents up to 200 A AC can be measured very quickly. The tester can also be used for AC/DC voltage measuring, resistance measuring and continuity test with acoustic indication.

The probes can easily be stored within the backside of the housing. By using the HOLD-button, measured values can be fixed.



Measuring currents up to 200A by the practical open jaw principle.



Voltage range	0 - 600 Volt AC/DC
Current range	0 - 200 A AC
Resistance	0...2k Ω
Continuity	< 25 Ω sound signal
Max. diameter conductor	12,7 mm.
Power supply	1 x 9V 6LR61 battery
IP-Protection	IP40
Overvoltage category	CATIII / 600V
Standards	EN 61010-1, EN 55022, IEC 801-2, IEC801-3, IEC801-4
Dimensions	188 x 67 x 41 mm.
Weight	± 265 gram

Article number	626 000 474
Packing	per piece in a box
EAN code	-
Including	manual

EASYPHASE



The EasyPhase is a simple 3-in-1 Test Tool for indication of phase rotation, indication of an open phase and rotation of motors. The tester is ideal for installing conveyor lines, pump systems and interconnected drivers.

The tester is battery operated and is supplied with leads (red, yellow and blue), alligator clamps and vinyl bag.



Voltage range	100 – 600 V AC
Frequency	45 – 70 Hz
Power supply	DC 9 V Battery
Power consumption	Approx. 7mA at phase rotation and approx. 14mA at motor rotation
Overvoltage category	CAT III/600V
Standard	EN 61010-1
Dimensions	153 x 72 x 35 mm.
Weight	± 180 gram

Article number	626 005 036
Packing	per piece in a box
EAN code	-
Including	manual, battery, test leads, alligator clamps, bag

EASYTESTER



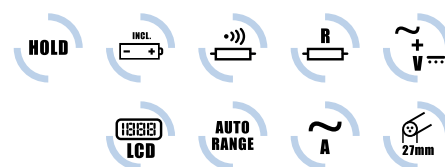
Current measuring

The EasyTester is a very universal and easy to use fully automatic test tool to measure AC/DC voltages, AC current and resistance. The tester can also perform a continuity test, has a Data Hold and a Auto Power Off function.

The instrument detects and switches automatically to the value to be measured, based on a priority system. First the EasyTester will measure AC or DC voltages. In case this signal is (almost) missing, the tester will automatically switch into resistance mode. In case this signal cannot be indicated, the tester will automatically switch into AC current mode.

With the clamp of the EasyTester conductors of 27 mm can be measured. The compact design makes the EasyTester easy in use and transport. The LCD-display, including Low-Battery indicator, is presenting all measured values clearly. By using the HOLD-function, the measured values on the instrument can be fixed.

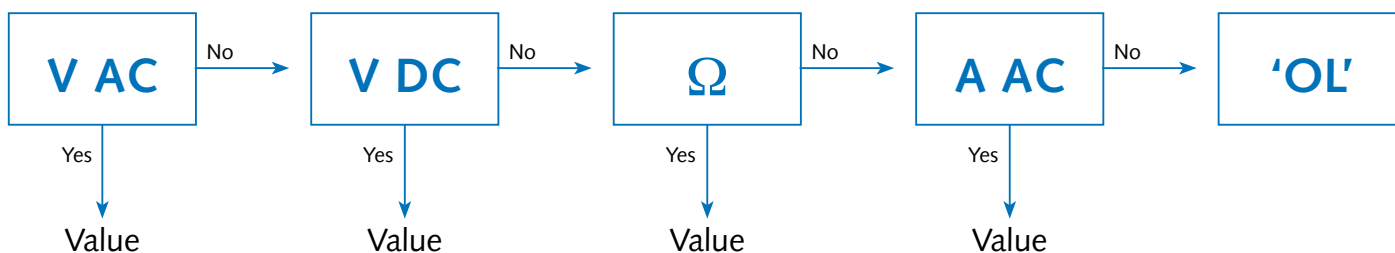
The probes can easily be stored in the backside of the housing, to enable the user to measure with one hand.



Voltage range	1,3 – 600 V AC / 1,8 – 600 V DC
Current range	0,6 – 400 A AC
Resistance	0 – 2000 Ω
Continuity	< 25 Ω
Max. diameter conductor	27 mm.
Auto Power Off	30 min.
Power supply	1 x 9V LR61 battery
IP-Protection	IP40
Overvoltage category	CATIII / 600V
Standard	EN 61010-1
Dimensions	188 x 67 x 41 mm.
Weight	± 265 gram (incl. battery)

Article number	626 005 027
Packing	per piece in a box
EAN code	-
Including	manual, test probes, battery

Automatic sequence



LINESPOTTER

Maintenance to existing LV installations requires a clear view in the structure of the installation. Especially older installations with a lot of changes and adjustments over the years can be unclear in the lay out, division of groups and even the location of the cables.

The LineSpotter is a universal instrument designed for tracing of hidden cables in walls, floors and grounds as well as core determination in a multicore cable. Also fuses and sockets assigned to a circuit can be localised. The LineSpotter assists with simple solutions for problems in hidden cables (short circuits, breaches etc.)

The 10 segment LED bargraph indicator and an acoustic signal give information about the strength of the received signal. Three different sensitivity levels are selectable as well as an adjustable wheel is fitted for fine tuning.

The transmitter automatically selects the users' level (Load or Generator) depending on the presence or absence of voltage in the installation. The transmitter acts as an active signal generator to DC loaded or non voltage cables and as pulsing electrical load to voltage loaded cables. In both modes a 10.6 kHz signal is injected in the cable connected to the transmitter.

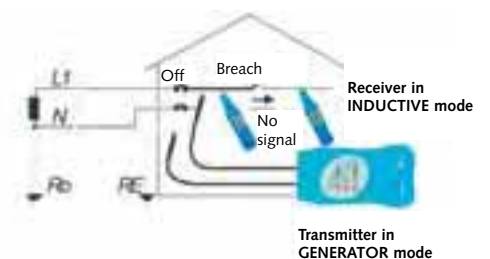
The LineSpotter is supplied with almost all accessories needed for the performing tests. All items are stored in a carrying bag. Optional are two types current clamps (1000A and 200A) and additional test leads.

APPLICATIONS

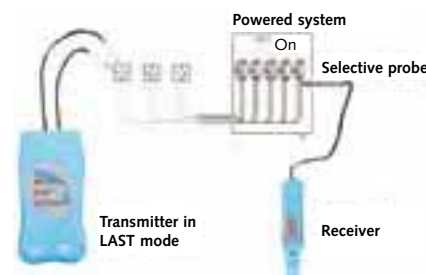
Searching for cables in walls, ceilings, floors and also blown fuses.



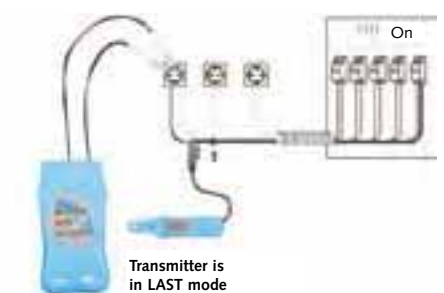
Detection of cable breaches.



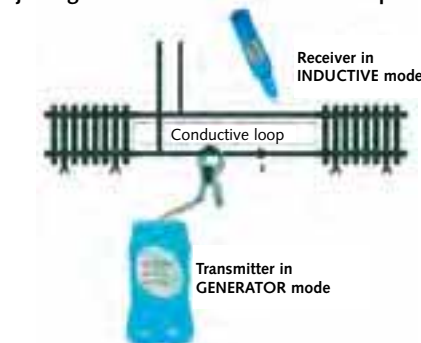
Locating a fuse.



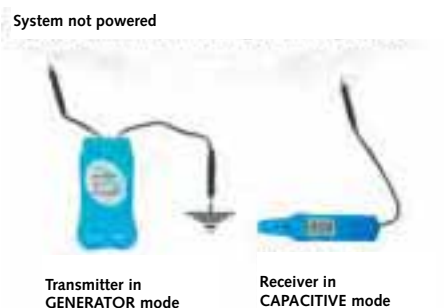
Locating the right fuse with a current clamp.



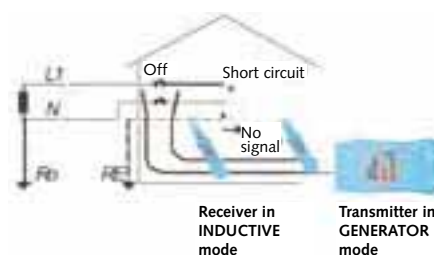
Injecting test current with a current clamp.



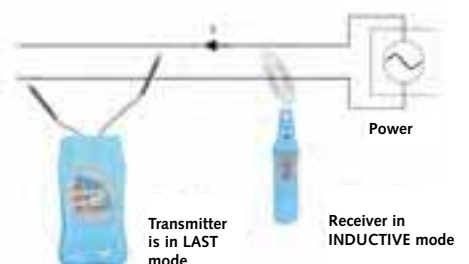
Detecting single wire, fuses etc.



Locating short circuits.



Transmitter as active load



LINESPOTTER



The LineSpotter is a detection device, designed to locate cables and plumbing in walls, floors or ceilings and to identify fuses.

The LineSpotter can be used for the following applications:

- Tracing of cables in walls, ceilings, floors or ground till 20 cm
- Indication under live and not connected situations
- Location of cable interruptions or short circuits
- Location of hidden sockets or distribution boxes
- Locating fuses and assignment to circuits
- Determining individual wires in a bundle
- Tracing of plumbing or other conductive loops

The principle of the instrument is based on a transmitter and a receiver. The transmitter is sending a signal of 10,6 kHz, which can be traced or located with the receiver. The receiver can be adjusted into three sensitivity modes; low, middle and high. The additional trimmer can do the fine-tuning.

Optical and acoustic indicators enable the user to use the instrument in poor lighted situations or conditions with heavy noise.



Transmitter	
Power Supply	4 x AA battery (1,5V)
Low battery indication	yes
Dimensions	80 x 50 x 150 mm.
Weight	± 280 gram

Receiver	
Power Supply	1 x PP3 battery (9V)
Low battery indication	yes
Dimensions	45 x 45 x 180 mm.
Weight	± 150 gram
Standard	EN 61010-1
Signal	10,6 kHz
Average injected current	1A

Article number	626 000 553
Packing	per piece in a box
EAN code	-

Including	manual, batteries, carrying bag, test leads, test probes, alligator clamps
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Locating of fuses



ENVIRONMETERS



NI L204

Measuring non-electrical values or better called environmental values, can be of great importance or influence in many industrial circumstances. Examples of such values are temperature or relative humidity. Other situations, in which such values can be important are working environments, utility etc. Other values are light- or sound level. The light level is important to measure at emergency exits etc.



NI S102

In answer to the need for measuring these non-electrical values, Nieaf Instruments is offering five different environmental testers within their program.



NI T8820

For measuring temperature levels, two temperature meters are available. The Infrared thermometer T880 is a handheld instrument with the ability to measure the temperature level of surfaces or rooms from a distance and without physical contact. This instrument can be used with or without the laser pointer. By the wide range of -50°C tot 280°C , many applications can be measured. The compact thermometer NI T82 is able to measure with one or two thermocouples, type J of K. In case two sensors are connected, the differential temperature can be indicated. The meter can also be used for temperature measurement based on a selectable reference level.

The digital light level meter NI L204 is one of the most compact meters available. The meter has an integrated sensor and automatic ranging. By the wide measuring range and the automatic cosine angular correction, the meter can be used in almost every situation.

For measuring the sound level optimally, the NI S102 sound level meter is available within the program. This compact meter has an integrated sensor and selects automatically the range which needs to be measured. For measuring in bad-lighted conditions, the backlight on the LCD-display can be switched on manually. The meter has an analogue output.



NI T82

The user-friendliest instrument for measuring several non-electrical values is the 4-in-1 environmental meter NI T882. This tester is designed to the all-in-one concept and can measure light level (lux), temperature ($^{\circ}\text{C}/^{\circ}\text{F}$), humidity (RH) and sound level (dB). The housing of the meter is standard equipped with the sensor for measuring sound level and a disconnecting probe for humidity. The light level sensor and temperature thermocouple (type K) can be connected separately.



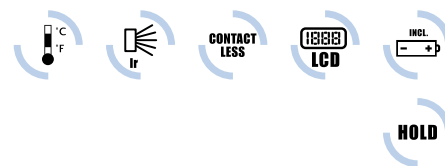
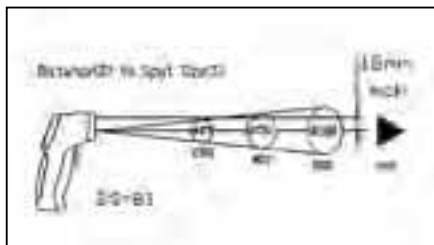
NI T880

NI T880 INFRARED THERMOMETER



The infrared thermometer NI T880 is a highly compact instrument with rough grip. This meter is one of the smallest available on the market.

The NI T880 can measure temperatures without contact. A laser pointer for indication of the measuring spot is included within the instrument. This laser can be switched on and off. Because of the large temperature range of -50°C ... 280°C, the thermometer can be used in many situations and applications. Standard functions of the instrument are Auto Power Off, Auto Data Hold and LCD-display with backlight. Including battery and carrying bag with belt-holder.



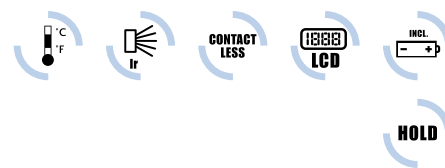
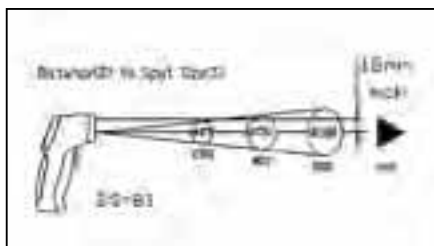
Range	-50 ... 280°C
Resolution	1°C
Accuracy	± 2% or ± 2°C
Auto Power Off	after 7 seconds
Laser pointer	output <1mW
wave length	630 – 670 nm
Class II laserproduct	
Power supply	1x 9V battery
Dimensions	160 x 82 x 41,5 mm.
Weight	± 180 gram

Article number	626 000 591
Packing	per piece in a box
EAN code	-
Including	manual, battery, carrying bag

NI T883 INFRARED THERMOMETER



The NI T883 InfraRed thermometer has the same functions as the NI T880, with the only difference of a larger measuring range. The NI T883 can measure temperatures from -50°C ~ +700°C.



Range	-50 ... 700°C
Resolution	1°C
Accuracy	± 2% of ± 2°C
Auto Power Off	after 7 seconds
Laser pointer	output <1mW
wave length	630 – 670 nm
Class II laserproduct	
Power supply	1x 9V battery
Dimensions	160 x 82 x 41,5 mm.
Weight	± 180 gram

Article number	626 000 596
Packing	per piece in a box
EAN code	-
Including	manual, battery, carrying bag

NI T82 THERMOMETER

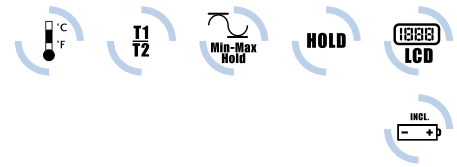


The thermometer NI T82 is a very practical instrument for measuring one or two temperature levels. As soon as the temperature probes are connected, the measured value will be displayed.

In case of two connected probes, the differential between measured temperatures, T1 and T2 can be indicated. The thermometer is suitable for type K and type J probes, to be selected on the instrument.

Besides these functions, the meter can hold the minimum or maximum measured value (min-max hold) and the differential temperature can be indicated. This temperature is based on a reference that can be selected manually (REL).

The NI T82 can indicate °C and °F, hold display values (Data Hold), indicates Low Battery and has Auto Power Off.



Range,	-200 ... 1370°C - type K -200 ... 1050°C - type J
Resolution	0,1°C
Accuracy	± (0,05% ± 0,7°C)
Auto Power Off	20 minutes
Standard	EN 61326-1
Power Supply	1x 9V battery
Dimensions	130 x 56 x 38 mm.
Weight	± 170 gram

Article number	626 000 592
Packing	per piece in a box
EAN code	-
Including	manual, battery, carrying bag, 2x thermocouple/ sensor type K

NI L204 DIGITAL LIGHT METER



The very compact shaped digital light meter NI-L204 is a user-friendly instrument with integrated sensor. With this the meter can be controlled by one hand.

The measured value is indicated in Lux or Fc (Footcandles). Because of the maximum range of 200.00 Lux or 20.000 Fc, the meter can be used in many situations.

The meter has several hold functions, such as Data Hold and Max Hold. Cosine angular is corrected automatically. The clear display indicates the measuring range, low battery etc.



Range	200, 2.000, 20.000, 200.000 Lux 20, 200, 2.000, 20.000 Fc
Accuracy	± 3%
Sampling rate	2,5 times per second
Standards	Designed for pollution degree 2, according JISC 1609 and CNS 5119A class specifications
Power Supply	1x 9V battery
Dimensions	170 x 55 x 38 mm.
Weight	± 250 gram

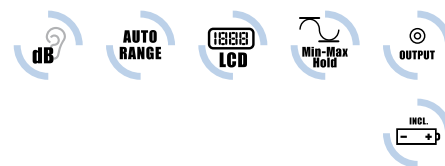
Article number	626 000 593
Packing	per piece in a box
EAN code	-
Including	manual, battery, carrying bag

NI S102 SOUND LEVEL METER



The NI S102 is a handheld compact sound level meter with automatic ranging (LO/MED/HI). Because of the integrated sensor/probe, the instrument can be used with one hand. On demand, the sound level meter can be switched between slow or fast reading and A of C frequency.

The LCD-display includes on-/off selectable backlight. The instrument can hold the min/max value, has Auto Power Off and an analogue DC output.



Range	LO: 30 ~ 80 dB MED: 50 ~ 100 dB HI: 80 ~ 130 dB
Resolution	0,1 dB
Accuracy	± 1,5 dB (ref 94dB@1KHz)
Frequency	A/C
Auto Power Off	20 minutes
Standards	IEC651 Type 2, ANSI S1.4 Type 2
Power supply	1x 9V battery
Dimensions	280 x 80 x 32 mm.
Weight	± 300 gram

Article number	626 000 594
Packing	per piece in a box
EAN code	-
Including	manual, battery, carrying bag

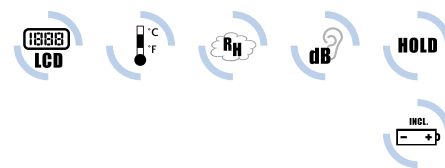
NI T8820 4-IN-1 ENVIRONMENT METER



The NI T8820 is a complete 4-in-1 Environment Meter for measuring light (Lux), temperature (°C/°F), humidity (RH) and sound level (dB). Despite this variety of functions the instrument is compact and truly handheld. It can easily be controlled with one hand.

The sensor for sound level measurement is integrated in the housing and the sensor of humidity measurement is a disconnectable probe. The temperature probe (type K) and the light meter are separately connectable to the housing of the instrument. The complete instrument is supplied standard in a carrying bag with shoulder band.

The NI T8820 is designed with many functions for all values to be measured. Hold-functions, such as Data Hold and Maximum Hold are included. For measuring light or sound level, the range can be selected manually. The Auto Power Off function saves the battery consumption.



Range light meter	20, 200, 2.000, 20.000 Lux
Resolution	1 lux (reading x10)
Accuracy	± (5% rdg + 10 dgt)
Temperature range	-20 ... 1.400 °C
Resolution	0,1 / 1 °C
Accuracy	± (3,5% rdg + 2°C)
Range humidity	25 ... 95% RH
Resolution	0,1% RH
Accuracy	± 5% RH
Sound level range	
A LO (Low)	35 - 100 dB
A HI (High)	65 - 130 dB
C LO (Low)	35 - 100 dB
C HI (High)	65 - 130 dB
Resolution	0,1 dB
Accuracy	± 3,5dB
Power Supply	1x 9V battery
Dimensions	252 x 64 x 32,5 mm.
Weight	± 330 gram

Article number	626 000 595
Packing	per piece in a box
EAN code	-
Including	manual, battery, carrying bag, thermocouple and light measuring sensor

MULTIMETERS



Voltmeter (anno 1960)



Multimeter (anno 1960)



Since its invention, the multimeter is a vital instrument for its users and has been developed logically from analogue indicator to an accurate (digital) measuring instrument with many functions.

Many integrated functions make these meters suitable for different markets and users. The instruments can be used for measuring electronics, electric installations, machinery, appliances, etc.

Nieaf-Smitt is one of the first manufacturers of multimeters and therefore very experienced in this market. The range of products is build up by a 'simple' and basic multimeter designed for service and repair activities. Followed by more sophisticated meters with True RMS, graphic display and even computer interface for PC compatibility.



The complete 70-series digital multimeters is a range of compact and ergonomic instruments. The series is wide in functions and starts with a basic multimeter, the NI 71. This meter can be considered as a perfect solution meter for



service and repair. The NI 72 is a complete instrument including all necessary functions, as well as wide ranges.

The True RMS NI 77 follows the multimeter NI 72 and the NI 79C is also True RMS and has an RS232 connector. In addition to the

standard functions, the NI 77 and NI 79C have a Peak Hold function.

A mature range of digital multimeters is the 90-series, based on two models. The NI 98II is one of the most user-friendly meters by its balanced functions and the NI 99II is the most versatile. Besides the standard functions, this True RMS meter can measure temperature, frequency and capacitance.

The NI 305R is a combination of high accuracy and easy operation. This complete multimeter is equipped with a graphic display including backlight and RS232 connector and software. Navigation on the instrument is very simple and it allows the user to do a relative measurement, to measure percentage etc.

All digital multimeters are fully equipped with probes/test leads and a protective holster, including stand and probe holders.



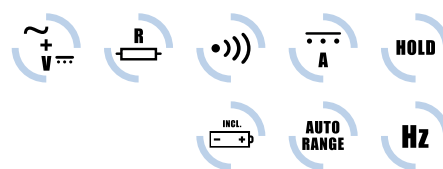
NI 71



The NI 71 is a very user friendly, compact and ergonomic multimeter. Excellent for service applications. The instrument has a large and clear display.

The multimeter can be used for measuring AC / DC voltage, DC current, capacitance and frequency. Other functions are continuity and diode test, Min-Max Hold and Data Hold, Auto Power Off and Automatic or Manual ranging.

The holster of the instrument is equipped with stand and probe holders.



Voltage range	600mV ... 750 VAC / 600mV ... 1000 VDC
Accuracy	± (0,9% + 5d) AC / ± (0,5% + 2d) DC
Current range	600µA, 6 m A DC
Accuracy	± (1,0% + 2d) DC
Resistance	600 Ω ... 60M Ω
Accuracy	± (0,7% + 2d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	6000d
Frequency	6000Hz - 60MHz
Accuracy	± (0,01% + 1d)
Capacitance	6 nF - 6 mF
Accuracy	± (1,9% + 8d)
Standard	EN 61010-1
Dimensions	164 x 82 x 44 mm.
Weight	± 380 gram
Battery	2 x AAA, 1,5 V

Article number	626 005 028
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protection holster, alligator clamp

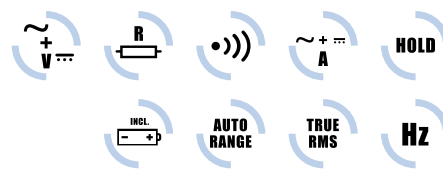
NI 72



The NI 72 is a very compact True RMS digital multimeter with many functions. Besides measuring AC / DC voltage, the meter can be used for measuring AC / DC current in two ranges, capacitance and frequency. Other functions are continuity and diode test, Min-Max hold and Data Hold.

Obviously, the NI 72 is included with Auto Power Off and Automatic or Manual ranging.

The holster of the instrument is equipped with stand and probe holders.



Voltage range	600mV ... 750 VAC / 600mV ... 1000 VDC
Accuracy	± (0,9% + 5d) AC / ± (0,5% + 2d) DC
Current range	6 A, 10 A AC 600µA, 6 mA, 6 A, 10 A DC
Accuracy	± (1,5% + 5d) AC / ± (1,0% + 2d) DC
Resistance	600 Ω ... 60M Ω
Accuracy	± (0,7% + 2d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	6000d
Frequency	6000Hz, 60MHz
Accuracy	± (0,01 + 1d)
Capacitance	4 nF - 4 mF
Accuracy	± (1,9% + 8d)
Standard	EN 61010-1
Dimensions	164 x 82 x 44 mm.
Weight	± 380 gram
Battery	1 x 9V

Article number	626 005 029
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protection holster, alligator clamp

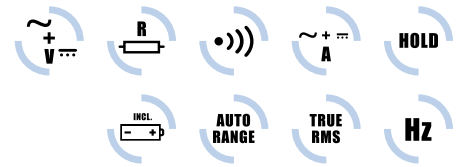
NI 77



The NI 77 is a True RMS digital multimeter with a various number of functions and a quick processor. The multimeter can measure AC / DC voltage, AC / DC current in two ranges, capacitance and frequency. It can also be used for continuity and diode test and is integrated with Min-Max, Data and Peak Hold.

Obviously, the NI 77 is included with Auto Power Off and Automatic or Manual ranging.

The holster of the instrument is equipped with stand and probe holders.



Voltage range	400mV ... 750 VAC / 400mV ... 1000 VDC
Accuracy	± (1,2% + 5d) AC / ± (0,5% + 2d) DC
Current range	10 A AC, 400µ A, 4mA, 10 A DC
Accuracy	± (1,5% + 5d) AC / ± (1,0% + 2d) DC
Resistance	400 Ω ... 40M Ω
Accuracy	± (0,7% + 2d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	4000d
Frequency	40kHz,- 40MHz
Accuracy	± (0,01% + 1d)
Capacitance	4 nF - 4 mF
Accuracy	± (1,9% + 8d)
Standard	EN 61010-1
Dimensions	164 x 82 x 44 mm.
Weight	± 380 gram
Battery	1 x 9V

Article number	626 005 030
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protection holster

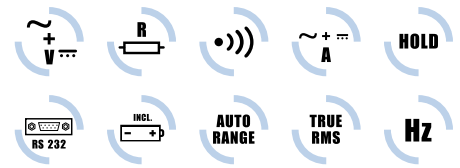
NI 79C



The NI 79C is a True RMS digital multimeter with clear display including backlight. Besides measuring AC / DC voltage, the multimeter can be used for measuring AC / DC current in two ranges, capacitance and frequency. Other functions are continuity and diode test, Min-Max, Data and Peak Hold.

The NI 79C is included with Auto Power Off, Automatic or Manual ranging and RS232 connector for communication of data to a PC.

The holster of the instrument is equipped with stand and probe holders.



Voltage range	400 mV ... 750 VAC / 400mV ... 1000 VDC
Accuracy	± (1,2% + 5d) AC / ± (0,5% + 2d) DC
Current range	10A AC 400µ A, 4mA, 10 A DC
Accuracy	± (1,5% + 5d) AC / ± (1,0% + 2d) DC
Resistance	400 Ω ... 40M Ω
Accuracy	± (0,7% + 2d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	4000d
Frequency	4kHz,- 40MHz
Accuracy	± (0,01% + 1d)
Capacitance	4 nF - 4 mF
Capacitance resistance	± (1,9% + 8d)
Standard	EN 61010-1
Dimensions	164 x 82 x 44 mm.
Weight	± 380 gram
Battery	1 x 9V

Article number	626 005 031
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protection holster

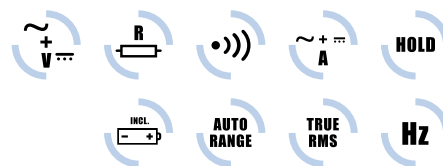
NI 98II



Because of the integrated True RMS technique, the NI 98II is a very accurate, professional and excellent multimeter. Including the 90-series characteristics, such as orderly display with bargraph and sturdy and ergonomic shape of the housing, the instrument is very user friendly.

Besides the wide range for AC / DC voltage, the NI 98II can also measure AC / DC current, resistance, frequency, rpm and capacitance. The meter can also be used for continuity and diode test. The multimeter is designed including Auto Power Off, Auto Ranging, Data Hold and many more functions.

The instrument is equipped with protective holster including stand and probe holders.



Voltage range	400mV...750VAC / 400mV...1000VDC
Accuracy	± (1,3% + 5d) AC / ± (0,25% + 1d) DC
Current range	40mA, 400mA, 10A AC / DC
Accuracy	± (2% + 5d) AC / ± (0,6% + 2d) DC
Resistance	400 Ω...40M Ω
Accuracy	± (0,4% + 3d)
Over voltage category	CATII - 1000V / CATIII - 600V
Display resolution	4000d
Frequency	4kHz, 40 MHz
Accuracy	± (0,01 + 1d)
Capacitance	4 nF - 40 mF
Accuracy	± (2% + 5d)
Standard	EN 61010-1
Dimensions	190 x 95 x 44 mm.
Weight	± 460 gram
Battery	1 x 9V

Article number	626 005 015
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, alligator clamp, hanging kit, protection holster

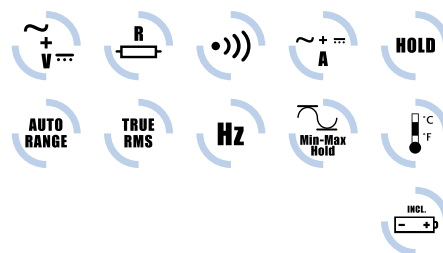
NI 99II



The most complete multimeter of the 90-series is the NI 99II. This True RMS multimeter is a merge of user friendly navigation, accuracy and quality. Because of its many functions, such as AC / DC current, AC / DC voltage, resistance, frequency and capacitance, the NI 99II is an excellent and complete digital multimeter.

The instrument is included with Auto Power Off, Auto Ranging, Data Hold, Min-Max Hold and temperature measurement function. For correct reading of the measured values in situation with less lighting, the NI 99II is equipped with a LCD display with backlight.

The instrument is equipped with protective holster including stand and probe holders.



Voltage range	400mV...750VAC / 400mV...1000VDC
Accuracy	± (1,3% + 5d) AC / ± (0,25% + 1d) DC
Current range	40mA, 400mA, 10A AC / DC
Accuracy	± (2% + 5d) AC / ± (0,6% + 2d) DC
Resistance	400 Ω...40M Ω
Over voltage category	CATII - 1000V / CATIII - 600V
Display resolution	4000d
Frequency	4kHz, - 40MHz
Capacitance	4 nF - 40 mF
Accuracy	± (2% + 5d)
Temperature	-20... + 800 °C
Accuracy	± (2% + 2 °C)
Standard	EN 61010-1
Dimensions	190 x 95 x 45 mm.
Weight	± 460 gram
Battery	1 x 9V

Article number	626 005 016
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, alligator clamp, hanging kit, protection holster, temperature adaptor

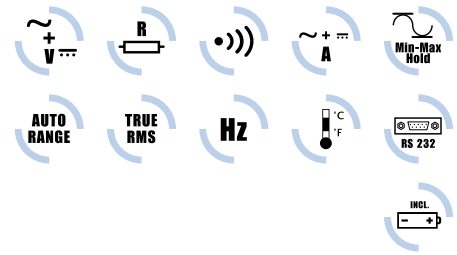
NI 305R



The NI 305R is an exceptional complete digital True RMS multimeter with very high accuracy $\pm(0,06\% +2d)$ in combination with versatile functions and user-friendly program.

The multimeter is equipped with all necessary functions, such as frequency-, capacitance, temperature and relative measurement, but also percentages can be measured. The multimeter has included internal memory, Auto Power Off, Auto Ranging, Data Hold and Min-Max Hold. Because of its simple set up procedure, the NI-305R can easily be customised on the user's demands. Via the RS232 connection, all data can be communicated to a PC.

The graphic display (incl. backlight) shows all measured data clearly. The instrument is equipped with protective holster including stand and probe holders.



Voltage range	400mV...750VAC / 40 μ V...1000VDC
Accuracy	$\pm (0,7\% + 5d)$ AC / $\pm (0,06\% + 2d)$ DC
Current range AC/DC	40mA...10A AC / DC
Accuracy	$\pm (0,8\% + 8d)$ AC / $\pm (0,2\% + 4d)$ DC
Resistance	400 Ω ...40M Ω
Accuracy	$\pm (0,3 + 2d)$
Over voltage category	CATII - 1000V / CATIII - 600V
Display resolution	40000d
Frequency	400Hz, - 4MHz
Accuracy	$\pm (0,01\% + 1d)$
Capacitance	400 nF - 10 mF
Accuracy	$\pm (0,9\% + 2d)$
Temperature range	-200... + 1300 °C
Accuracy	$\pm (1\% + 2 °C)$
Standard	EN 61010-1
Dimensions	210 x 100 x 55 mm.
Weight	± 685 gram
Battery	1 x 9V

Article number	626 005 005
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, alligator clamp, thermocouple + adapter, protection holster

Model	NI 71	NI 72	NI 77	NI 79C	NI 98II	NI 99II	NI 305R
Display resolution	6000d	6000d	4000d	4000d	4000d	4000d	40.000d
Bargraph display	•	•	•	•	•	•	•
Backlight				•		•	
Voltage AC	from 600mV to 750 V	600mV 750 V	400mV 750 V	400mV 750 V	400mV 750 V	400mV 750 V	400mV 750 V
Accuracy	±(0.9%+5d)	±(0.9%+5d)	±(1.2%+5d)	±(1.2%+5d)	±(1.3%+5d)	±(1.3%+5d)	±(0.7%+5d)
Voltage DC	from 600mV to 1000V	600mV 1000V	400mV 1000V	400mV 1000V	400mV 1000V	400mV 1000V	40µV 1000V
Accuracy	±(0.5%+2d)	±(0.5%+2d)	±(0.5%+2d)	±(0.5%+2d)	±(0.25%+1d)	±(0.25%+1d)	±(0.6%+2d)
Current AC		6A, 10A	10A	10A	40mA, 400mA, 10A	40mA, 400mA, 10A	40mA, 10A
Accuracy		±(1.5%+5d)	±(1.5%+5d)	±(1.5%+5d)	±(2%+5d)	±(2%+5d)	±(0.8%+8d)
Current DC	600µA 6mA	600µA, 6mA 6 A, 10A	400µA, 4mA, 10A	400µA, 4mA, 10A	40mA, 400mA, 10A	40mA, 400mA, 10A	40mA 10A
Accuracy	±(1.0%+2d)	±(1.0%+2d)	±(1.0%+2d)	±(1.0%+2d)	±(0.6%+2d)	±(0.6%+2d)	±(0.2%+4d)
True RMS measurement		•	•	•	•	•	•
Resistance	600 Ω, 60 MΩ	600 Ω, 60 MΩ	400 Ω, 40 MΩ	400 Ω, 40 MΩ	400 Ω, 40 MΩ	400 Ω, 40 MΩ	400 Ω, 40 MΩ
Accuracy	±(0.7%+2d)	±(0.7%+2d)	±(0.7%+2d)	±(0.7%+2d)	±(0.4%+3d)	±(0.4%+3d)	±(0.3+2d)
Diode and continuity test	•	•	•	•	•	•	•
Capacitance	from 6 nF to 6 mF	4 nF 4 mF	4 nF 4 mF	4 nF 4 mF	4 nF 40 mF	4 nF 40 mF	400 nF 10 mF
Accuracy	±(1,9%+8d)	±(1,9%+8d)	±(1,9%+8d)	±(1,9%+8d)	±(2%+5d)	±(2%+5d)	±(0.9+2d)
Frequency	6kHz, 60MHz	6kHz, 60MHz	40kHz, 40MHz	4kHz, 40MHz	4kHz, 40MHz	4kHz, 40MHz	0.1Hz, 40MHz
Accuracy	±(0.01%+1d)	±(0.01%+1d)	±(0.01%+1d)	±(0.01%+1d)	±(0.01%+1d)	±(0.01%+1d)	±(0.01%+1d)
Temperature	from to					-20°C 800°C	-200°C 1200°C
Accuracy						±(2%+2°C)	±(1%+2°C)
Range selection							
Automatic	•	•	•	•	•	•	•
Manual	•	•	•	•	•	•	•
PeakHold			•				•
Data Hold	•	•	•	•	•	•	•
Min/Max Hold	•	•	•			•	•
Relative measurement	•	•					
Memory Recall	•			•			
Auto Power-Off	•/can be switched off	•/can be switched off	•/can be switched off	•/can be switched off	•/can be switched off	•/can be switched off	adjustable
Overload protection	•	•	•	•	•	•	•
Set leads	•	•	•	•	•	•	•
Protection holster	•	•	•	•	•	•	•
Stand	•	•	•	•	•	•	•
Overvoltage category	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V	CATII/600V CATIII/600V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V
Battery	2 x 1,5 V	1 x 9 V	1 x 9 V	2 x 1,5 V	1 x 9 V	1 x 9 V	1 x 9 V

CURRENT CLAMPS



Current clamps have been developed into multiple function devices and are being called multimeters more and more. The clamps can often be used for measuring AC / DC currents, AC / DC voltage, resistance, continuity and sometimes even power.



The NI 10-series current clamp is a complete professional range of clamps with ergonomic and compact design. The series start by a basic clamp, the NI 11, with an AC current range up to 600 A and an AC / DC voltage 600 V. The NI 11R is the True RMS version of this clamp. For measuring AC and DC current, the True RMS clamp NI 12R is most suitable. The clamps of the 10-series have a clear display with backlight and many hold functions.

This True RMS clamp is equipped with a maximum hold function for fixing the maximum measured values.

For measuring higher currents (up to 1000 A), the NI 39MR is the best choice. This sturdy clamp is able to measure not only AC / DC current and voltage, but can also measure frequency and is equipped with a Peak Hold and zero button.

The NI 349PR is the most complete and multiple function instrument within the current clamp portfolio. It is able to measure currents in an enormous range (up to 2500 A!) and power up to 1200 kW. The clamp can also measure temperature and extra leads or probes can be connected to the terminals. By using the clamp as an adapter, it can easily be connected to an oscilloscope or datalogger.



The housing of the clamps have been developed strongly in the past years. In addition to the ergonomic shape, the handy rotation switch and clear display, some clamps are equipped with a drop shaped jaw (opening) for optimal measurement.

The program of current clamps offers a wide range of functions and opportunities. The smallest clamp is the NI 30, but its not inferior to any larger clamp. The NI 30 is able to measure AC / DC voltage

Due to the many functions, such as AC / DC voltage, current and resistance, the NI 36RII is an excellent and versatile current clamp.



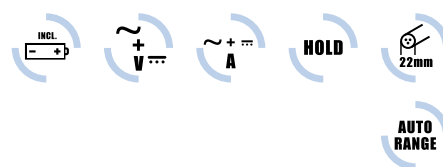
NI 30



This is a very compact AC / DC current clamp for accurate measurement of voltage, current (300 A) or resistance. The NI 30 has a clear display, Auto Ranging, Data Hold and Auto Power Off. The clamp can be used for continuity testing and has a maximum hold function, zero button and safety carrying band.



Easy current testing



Voltage range	400mV...600V AC / DC
Accuracy	± (1,5% + 5d) AC / ± (0,5% + 2d) DC
Current range	40A...300A AC / DC
Accuracy	± (1,0% + 3d) AC / ± (2,0% + 2d) DC
Resistance	400 Ω...40M Ω
Accuracy	± (0,9% + 3d)
Over voltage category	CATII - 600V / CATIII - 300V
Display resolution	3999d
Frequency	20...10kHz
Accuracy	± (0,5% + 3d)
Max. conductor size	22 mm.
Max. jaw opening	25 mm.
Standard	EN 61010-1
Dimensions	192 x 66 x 27 mm.
Weight	± 205 gram
Battery	2 x 1.5 V, AAA size

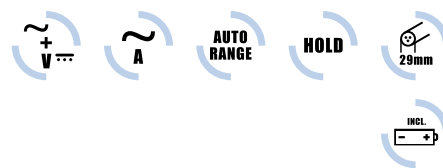
Article number	626 005 020
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carrying case

NI 1715



The NI 1715 is a current clamp multimeter combination with a very elegant and compact shape and is very user friendly for AC / DC voltage and AC current (300A). The clamp can also be used with probes as an adapter, measure resistance and used for continuity testing.

Standard functions are Auto Ranging, Data Hold and Auto Power Off.



Voltage range	3,2V... 600V AC / 320V...600V DC
Accuracy	± (1,7% + 5d) AC / ± (0,7% + 2d) DC
Current range	0,1A...300A AC
Accuracy	± (1,9% + 0,5A)
Resistance	320 Ω ...30M Ω
Accuracy	± (1,2% + 4d)
Over voltage category	CATII / 600V
Display resolution	3200d
Max. conductor size	29 mm.
Max. jaw opening	30 mm.
Standard	EN 61010-1
Dimensions	225 x 72 x 36 mm.
Weight	± 270 gram
Battery	2 x 1.5 V, AAA size

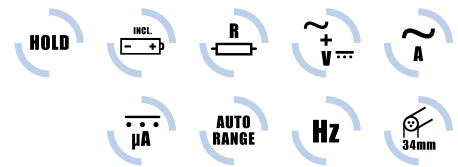
Article number	626 005 006
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, test probes, alligator clamp protective/carrying case

NI 11



This elegant shaped, ergonomic current clamp is suitable for measuring AC currents, AC/DC voltages, resistances and frequencies. The integrated LCD-display is included with bargraph and backlight. This allows the user to use the clamp in dark applications and surroundings. The value to be measured can easily be selected by the integrated rotary switch. Therefore, the clamp can be controlled by one hand.

Standard, the NI 11 has several Hold functions, such as Display Hold, Peak Hold (10ms) and Min-Max Hold. Obviously, the instrument has Auto Ranging, continuity test function and Auto Power Off.



Voltage range	0,1 ... 600 VAC/DC
Accuracy	± (1,0% + 5d) AC / ± (0,7% + 2d) DC
Current range	0,1 ... 600 A AC
Accuracy	± (1,9% + 5d) AC
Resistance	0,1 Ω ... 400Ω
Accuracy	± (1% + 3d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	4000d
Frequency	4kHz - 10kHz
Accuracy	± (0,1% + 2d)
Max. conductor size	34 mm.
Max. jaw opening	40 mm.
Standard	EN 61010-1
Dimensions	220 x 70 x 50 mm.
Weight	± 360 gram
Battery	2 x 1,5V, AA size

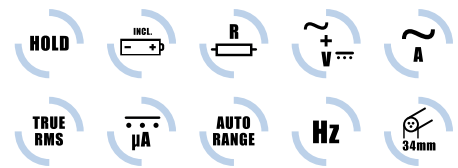
Article number	626 005 032
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carrying case

NI 11R



The NI 11R is an elegant and ergonomic True RMS current clamp for measuring AC currents, AC/DC voltages, resistances and frequencies.

This clamp is equal in functionality to the NI 11, except for the integrated True RMS measurement.



Voltage range	0,1 ... 600 VAC/DC
Accuracy	± (1,0% + 5d) AC / ± (0,7% + 2d) DC
Current range	0,1 ... 600 A AC
Accuracy	± (1,9% + 5d) AC
Resistance	0,1 Ω ... 400Ω
Accuracy	± (1% + 3d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	4000d
Frequency	4kHz - 10kHz
Accuracy	± (0,1% + 2d)
Max. conductor size	34 mm.
Max. jaw opening	42 mm.
Standard	EN 61010-1
Dimensions	220 x 70 x 50 mm.
Weight	± 360 gram
Battery	1 x 9V

Article number	626 005 033
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carrying case

NI 12R

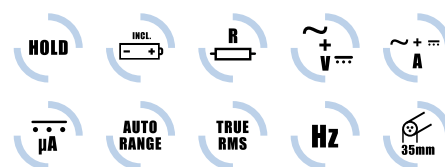


The complete and versatile current clamp NI-12R is an elegant and ergonomic shaped instrument. This clamp is suitable for measuring AC/DC currents (up to 600A), AC/DC voltages, resistances and frequencies.

Using the rotary switch for selection of the appropriate measurements is easy. The measured values are displayed clearly on the LCD-display, including backlight and bargraph.

Besides the zero-button for DC currents, the clamp has several Hold functions such as Display Hold, Peak Hold (10ms) and Min-Max Hold. Also functions like continuity test, Auto Range and Auto Power Off are available.

The jaw opening (45 mm.) can measure conductors up to 35 mm. In order to protect the user, the display has a low battery indicator.



Voltage range	0,1 ... 600V AC / DC
Accuracy	± (1,0% + 5d) AC / ± (0,7% + 2d) DC
Current range	0,1 ... 600A AC / DC
Accuracy	± (1,9% + 5d) AC / ± (1,5% + 5d) DC
Resistance	0,1 Ω ... 600Ω
Accuracy	± (1% + 3d)
Over voltage category	CAT II/1000V – CAT III/600V
Display resolution	4000d
Frequency	4kHz - 10kHz
Accuracy	± (0,1% + 2d)
Max. conductor size	35 mm.
Max. jaw opening	45 mm.
Standard	EN 61010-1
Dimensions	235 x 78 x 51 mm.
Weight	± 380 gram
Battery	1 x 9V

Article number	626 005 034
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carrying case

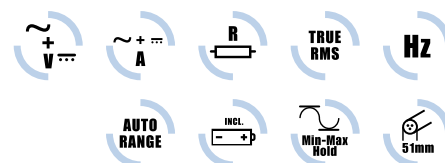
NI 39MR



This True RMS current clamp enables the user to measure AC / DC current up to 1000 A! The clamp can also be used for measuring AC / DC voltage, resistance and frequency. These functions can be selected easily by the rotating switch.

Extra functions of the NI 39MR are Data Hold, Peak Hold, continuity test and Auto Power Off.

The clamp is standard equipped with a zero button for measuring DC current.



Voltage range	0,1... 600V AC / 0,1...1000V DC
Accuracy	± (1,2% + 5d) AC / ± (0,7% + 2d) DC
Current range	0,1...1000A AC/DC
Accuracy	± (1,5% + 5d) AC / ± (1,0% + 3d) DC
Resistance	1 Ω ...40k Ω
Accuracy	± (1% + 2d)
Over voltage category	CATII - 600V / CATIII - 300V
Display resolution	3999d
Frequency	40...400Hz
Accuracy	± (1,5% + 5d)
Max. conductor size	51 mm.
Max. jaw opening	53 mm.
Standard	EN 61010-1
Dimensions	265 x 100 x 42 mm.
Weight	± 420 gram
Battery	1 x 9V

Article number	626 005 011
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carrying case

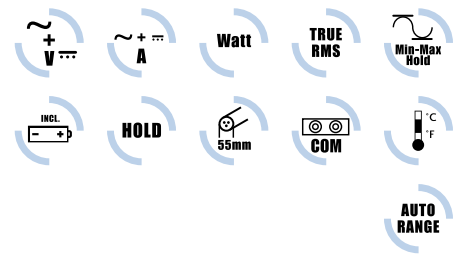
NI 349PR



The NI 349PR is a very sturdy, high quality and multifunctional True RMS current clamp with a huge measuring range. This clamp can measure alternating current up to 2100 A and direct current up to 2500 A. Also alternating voltage up to 600 V and direct voltage up to 1000 V can be measured. Remaining functions are continuity, relative measuring and temperature measuring, completed with the possibility for measuring power up to 1200kW.

For optimum operating use, the NI 349PR is provided with a rotary switch for the selection of functions and Auto Power Off, Min-Max and Data Hold function, a clear LCD display and zero-button for use at direct current measurements.

Via the terminals external measurement values (test leads or temperature reading) can be inserted. These terminals are also used as a COM-output for connecting the clamp to an oscilloscope or datalogger.



Voltage range	400mV...600V AC / DC
Accuracy	± (1,5% + 5d) AC / ± (1,5% + 3d) DC
Current range	0,1 A...2100A AC 0,1...2500A DC
Accuracy	± (1,5% + 3d) AC / ± (1,5% + 3d) DC
Resistance	0...400 Ω
Accuracy	± (1.0% + 2d)
Power range	0,01...1200kW
Accuracy	± (2.5% + 5d)
Over voltage category	CATIII / 600V
Max. jaw opening	55 mm.
Temperature	-50°C...1000°C
Standard	EN 61010-2-032
Dimensions	271 x 112 x 36 mm.
Weight	± 650 gram
Battery	1 x 9V

Article number	626 005 025
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carry case, temperature sensor (Type K)

Model		NI 1715	NI 30	NI 11	NI 11R	NI 12R	NI 39MR	NI 349 PR
Display resolution		3200d	3999d	4000d	4000d	4000d	3999d	3999d
Current AC		0.1A, 300A	40mA, 300A	0.1A, 600A	0.1A, 600A	0.1A, 600A	0.1A, 1000A	0.1A, 2100A
Accuracy		±(1.9%+0.5A)	±(1.0%+3d)	±(1.9%+5d)	±(1.9%+5d)	±(1.9%+5d)	±(1.5%+5d)	±(1.5%+3d)
Current DC			40mA, 300 A			0,1A, 600A	0,1A, 1000A	0,1A, 2500A
Accuracy			±(2.0%+2d)			±(1.5%+5d)	±(1.0%+3d)	±(1.5%+3d)
Voltage AC	from to	3,2V 600V	400mV 600V	0,1V 600V	0,1V 600V	0,1V 600V	0,1V 600V	400mV 600V
Accuracy		±(1.7%+5d)	±(1.5%+5d)	±(1.0%+5d)	±(1.0%+5d)	±(1.0%+5d)	±(1.2%+5d)	±(1.5%+5d)
Voltage DC	from to	320V 600V	400mV 600V	0,1V 600V	0,1V 600V	0,1V 600V	0,1V 600V	400mV 600V
Accuracy		±(0.7%+2d)	±(0.5%+2d)	±(0.7%+2d)	±(0.7%+2d)	±(0.7%+2d)	±(0.7%+2d)	±(1.5%+3d)
Input impedance		10MΩ	>9MΩ				10MΩ	
Resistance	from to	320 Ω 30 MΩ	400 Ω 40 MΩ	0,1 Ω 400Ω	0,1 Ω 400Ω	0,1 Ω 400Ω	1 Ω 40kΩ	0,1 Ω 400Ω
Accuracy		±(1.2%+4d)	±(0.9%+3d)	±(1%+3d)	±(1%+3d)	±(1%+3d)	±(1.0%+2d)	±(1.0%+2d)
Continuity		•	•	•	•	•	•	•
Frequency range			20Hz, 10kHz	4kHz, 10kHz	4kHz, 10kHz	4kHz, 10kHz	40Hz, 400Hz	1Hz, 10kHz
Accuracy			±(0.5%+3d)	±(0.1%+2d)	±(0.1%+2d)	±(0.1%+2d)	±(1.5%+5d)	±(0.5%+3d)
Power								0,01kw 1200kw
Accuracy								±(2.5%+5d)
Output voltage		1mV/0.1A						1mV/A
Relative measurement								•
Temperature range	from to							-50°C/F 1000°C/F
Over voltage category		CATII/600V	CATII/600V CATIII/300V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V	CATII/1000V CATIII/600V
Power Supply		AAA size 1.5V x2	AAA size 1.5V x2	1.5V x2	9V 1x	9V 1x	9V 1x	9V 1x
Data Hold		•	Data Hold	•	•	•		Data Hold
Meas.ment range selection								
Automatic		•	•	•	•	•	•	•
Manual		•		•	•			•
Peak Hold				•	•	•		•
True RMS				•	•	•	•	•
Min/max hold			maxhold	•	•	•		•
Auto Power-Off		•	•	•	•	•	•	•
Max. conductor size		29mm.	22 mm.	34 mm.	34 mm.	35 mm.	51 mm.	55 mm.
Max. jaw opening		30mm.	25 mm.	37mm.	37mm.	45 mm.	53 mm.	55 mm.

EARTH LEAKAGE CLAMP



Detection if an installation is decreasing in quality, is not always easy. Especially factors such as earth leakage or frequent tripping of the RCD are difficult. In most of these cases the access to the installation is influencing the time of the inspection negatively and in many cases it will make an inspection or repair very expensive. For such problems, an earth leakage clamp is most convenient.

The best way to explain a possible 'problem situation' is by a simple example. Suppose an installation is completely or partially out of order. The installer called to solve the problem finds out that the RCD is causing the trouble. When in a difference between phase and neutral occurs, the RCD trips due to an obvious leakage to earth. Frequently tripping means a continuous leakage.

The most logical reason for such problem is an increased insulation resistance to phase and earth. In order to detect this problem, the installer decides to perform an insulation resistance test. To do so, all cables of the installation will need to be diverted and disconnected. Also all electronic devices will need to be disconnected from the installation. In addition to this case, the installation is equipped with high sensitive appliances and equipment.

Performing an insulation resistance test will seriously damage these devices. The customer however, wishes to continue operation or at least keep the time for the inspection as short as possible.

In case of this example, an earth leakage clamp can be used for measuring a leakage

current or differential current. The clamp can also be used for locating such currents without having to disconnect or switch off the installation. This saves a lot of time and money!



NI 333

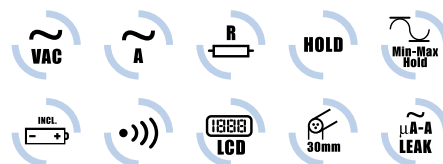


At first, the NI 333 looks like a normal current clamp. Nevertheless, the special integrated technique of the jaw enables the user to measure very low or differential currents. In the range up to 40µA, the clamp can even measure with a resolution of 10µA. For normal use, the clamp can measure up to 60A, voltage up to 400V and resistance up to 400Ω.

The NI 333 is designed with an ergonomic housing with a wide jaw (opening). With this jaw, conductors up to 30 mm. can be measured easily. The clamp is having APO (Auto Power Off), Data Hold, Min/Max Hold and the ability to perform a continuity test and relative measurement.

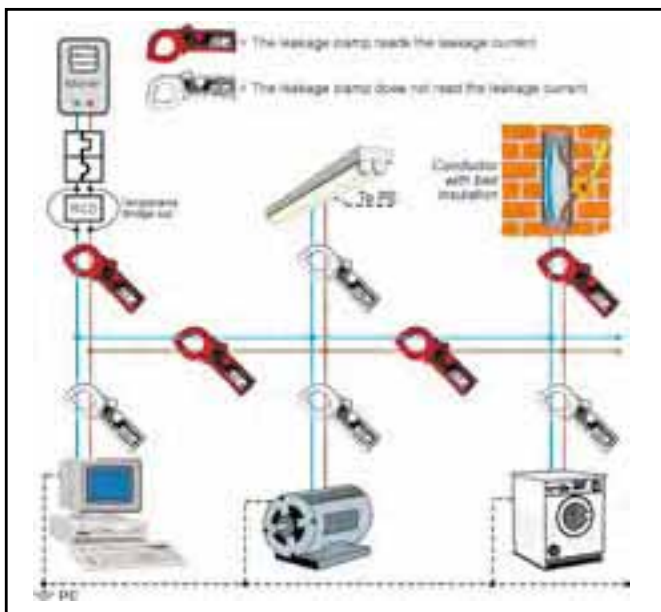
The jaw of the clamp is very sensitive, yet very well isolated. This enables the user to measure not only within the standard frequency of 50/60 Hz, but also harmonics and higher frequencies. In order to filter the disturbance of high frequencies, a special filter has been developed. This widens the range from 40Hz up to 1kHz.

All measured values are displayed on the LCD screen. The NI 333 is available including carry band/ wristband.



Voltage range	0,1V...400 V AC
Accuracy	± (1% + 3d) AC
Current range	10µA...60 A AC
Accuracy	± (1,5% + 2d) AC
Resistance range	0,1 Ω...400 Ω
Accuracy	± (1% + 2d)
Over voltage category	CATII / 600V CATIII / 300V
Display resolution	3999d
Max. conductor size	30 mm.
Standard	EN 61010-1
Dimensions	210 x 70 x 40 mm.
Weight	± 230 gram (incl. batteries)
Battery	1 x 9V

Article number	626 005 024
Packing	per piece in a box
EAN code	-
Including	manual, batteries, test leads, protective/carrying case



CURRENT CLAMP ADAPTERS



In many cases the standard testing equipment do not offer the flexibility or capacity for a current measurement. Multimeters for instance are mostly limited in their range or capacity (10Amps). Besides, such instruments are unable to measure currents without making contact to the conductor.

Current clamp adapters are developed to be a simple accessory and/or extension to the digital multimeter or other instruments. These adapters are standard equipped with two connectors for connection to a multimeter and a curled cable for measuring at a distance of the instrument.



By using the same technique as standard current clamps, the current clamp adapters have a completely isolated jaw. This makes it possible to accurately measure high(er) currents up to 1000A.

In case of using an analyser or data logger, the instruments are designed to store, analyse and display different values. With the Power Harmonics Analyser PHA 3300 and Power Quality Analyser PQA6600, current, voltage, power, harmonics and even transients can easily be measured and logged. The instruments can be used in single- or three phase installations. For measuring currents with these Power Analysers several clamp adapters are available. The portfolio of clamp adapters is build up by several different models. Each with its own size, range or type of jaw.

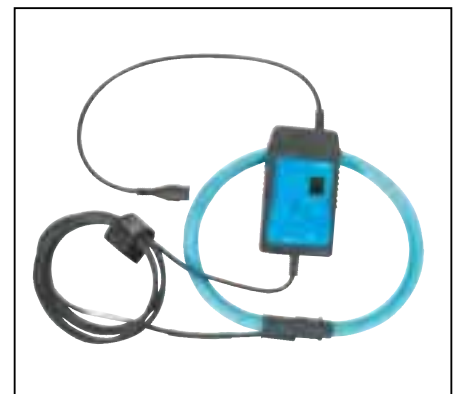
The mini adapters have a range of 20 or 200 Amps. Because of their small size, the adapters can be carried and used easily. The jaw (opening) of 15 x 17 mm. can be used for most conductors/cables in a low voltage installation.

In case higher currents have to be measured, clamps with a range of 400A and 1000 Amps are available. These adapters can be used for larger conductors of heavy installations or appliances. The jaw (opening) is 52 mm. and



therefore easy to use in every application. Due to lack of room, some applications do not allow the use of a standard jaw of a current clamp or clamp adapter. For these situations, a flexible clamp is available. The flex clamp has one flexible head, which can be mounted around a conductor easily.

By using the Rogowski principle, the clamp can be used for a wide range without losing accuracy. In order to keep this accuracy, the range switch can be used to switch between 30, 300 or 3000 Amps. This switch can also be used for ON/OFF mode.



NI 31



The compact current clamp adapter NI 31 is an easy to use solution for measuring high currents (AC) in combination with a multimeter. Complete with curled cable, the adapter can be connected on the multimeter.



Current range	0,1...400 A AC
Accuracy	$\pm (1,9\% + 0,5A)$
Output voltage	1mV AC voltage per 1A AC
Max. conductor size	29 mm.
Max. jaw opening	30 mm.
Over voltage Category	CATII – 600V
Standard	EN 61010-1
Dimensions	148 x 72 x 36 mm.
Weight	± 250 gram

Article number	626 005 007
Packing	per piece in a box
EAN code	-

Including	manual, protective/ carrying bag
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NI 39T



The NI 39T is used for measuring AC or DC currents up to 1000A!

By using the rotating switch to choose the correct range, measurements can be done single handed. The integrated zero button can be used for DC measurements. The adapter has two LED's, for Low Battery and Power On indication. Complete with curled cable, the adapter can be connected to the multimeter.



Current range	1...100 A 100 A ... 1000 A AC / DC
Accuracy	$\pm (1,9\% + 2A)$ AC / $\pm (1,9\% + 7A)$ DC
Output voltage	1mV voltage per 1A AC (1000A) 10m VA per 1A AC (100A)
Max. conductor size	51 mm.
Max. jaw opening	53 mm.
Over voltage category	CATII – 1000V CATIII – 600V
Standard	EN 61010-1
Dimensions	232 x 90 x 32 mm.
Weight	± 420 gram

Article number	626 005 022
Packing	per piece in a box
EAN code	-

Including	manual, protective/ carrying bag
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20A/1V EN 200A/1V



Miniature current clamp adapter for Power Analysers PHA3300 and PQA6600. With their small size, the clamp can easily be stored in the carry bag together with the Analyser.

Most of the cables in a low voltage installation can be measured highly accurate by the jaw (opening) of 15 x 17 mm. The 20A/1V and 200A/1V are equal clamps, except for their maximum capacity.



Output signal	1 V AC at nominal input current
Frequency range	40 Hz tot 5000 Hz
Dielectric strength	3000 V 50 Hz at 1 minute
Temperature range	-10°C tot +50°C
Output	1.5 meter cable with D01 connector
20A/1V	
Ratio	20A: 1V
Nominal input current	20A
Max. Cont. Input current	25A
Accuracy	1% (2A tot 24A)
200A/1V	
Ratio	200A: 1V
Nominal input current	200A
Max. Cont. Input current	250A
Accuracy	1%
Over voltage category	CAT III/600V
Standard	EN 61010-1
Max. voltage	
not insulated conductors	30V RMS
insulated conductors	600V RMS
Max. jaw opening	15 x 17 mm.
Dimensions	90 x 40 x 23 mm.
Weight	± 115 gram

Article number 20A/1V	626 000 521
Article number 200A/1V	626 000 520
Packing	per pice in a box
EAN	-

400A/1V EN 1000A/1V



Current clamp adapters for Power Analysers PHA3300 and PQA6600. With these adapters higher currents up to 400A or 1000A and larger conductors can be measured. The jaw (opening) is 52 mm.



Output signal	1 V AC at nominal input current
Frequency range	40 Hz tot 5000 Hz
Dielectric strength	3000 V 50 Hz at 1 minute
Temperature range	-10°C tot +50°C
Output	1.5 meter cable with D01 connector
400A/1V	
Ratio	400A: 1V
Nominal input current	400A
Max. Cont. Input current	500A
Accuracy	1%
1000A/1V	
Ratio	1000A: 1V
Nominal input current	1000A
Max. Cont. Input current	1200A
Accuracy	1%
Over voltage category	CAT III/600V
Standard	EN 61010-1
Max. voltage	
not insulated conductors	600V
Max. jaw opening	52 mm.
Dimensions	101 x 215 x 40 mm.
Weight	± 610 gram

Article number 400A/1V	626 000 519
Article number 1000A/1V	626 000 542
Packing	per piece in a box
EAN	-

FLEXTANG 3000A/1V 1 FASE



Flexible current clamp adapter suitable for Power Analysers PHA3300 and PQA6600. The flexible head is used for easy measuring in those installations which are difficult to reach or where limited space is available.

By using the Rogowski-principle, very accurately a wide range can be measured. The measuring range goes up to 3000A. In order to keep the accuracy level, the clamp has a switch for manual ranging and ON-OFF mode.



Output signal	1 V AC at nominal input current
Frequency range	10 Hz tot 20k Hz
Dielectric strength	5550 V, 50 Hz at 1 minute
Temperature range	-10°C tot +70°C
Output	0.5 meter cable with D01 connector
Ratio	3000A: 1V
Nominal input current	3000A
Max. Cont. Input current	4200A
Accuracy	1%
Over voltage category	CAT III/600V
Standard	EN 61010-1
Max. voltage not insulated conductors	600V
Max. jaw opening	100 mm.
Dimensions	n/a
Weight	± 870 gram

Article number	626 000 550
Packing	per piece in a box
EAN	-

EARTH CLAMPS (UTILITY – CITY MEASUREMENTS)



It is very important to determine the quality of each separate earth electrode, when more than one earth system is parallel connected. In general it is difficult to release the mechanical connection of these electrodes because of rusty parts like screws, bolts etc.

That is why the ERT-S and the Eurotest are equipped with the UTILITY mode. This function offers the possibility to use a current clamp for measurements of such earth electrodes without disconnected those.

The ERTa7 has a range up to 1000A and the miniclamp up to 200A



Output signal	1A at nominal input current
Frequency range	40 – 5000 Hz
Output	1,5 meter cable with 4 mm. plugs
ERTa7	
Ratio	1000A:1A
Max. jaw opening	52 mm.
Dimensions	10 x 215 x 40 mm.
Weight	± 610 mm.
Miniclamp	
Ratio	200A:200mA
Max. jaw opening	15 x 17 mm
Dimensions	90 x 40 x 23 mm.
Weight	± 115 gram

Art. No. ERTa7	626 000 309
Art. No. miniclamp	626 000 637
Packing	per piece



INSTALLATION TESTERS



Earth Resistance Tester



ERT-S in use



CMB-S in use

All countries in the world have special regulations for testing and approval of Low Voltage installations. In many countries these regulations are prescribing installers, inspectors etc. to check the electrical installation periodically.

The basis for the local regulations is in many occasions the IEC/EN 60364 "Electrical installations of Buildings". In relation to this regulation, all important parts of a LV-installation need to be approved.

Prescribed tests that need to be performed are:

- RCD test
- Insulation Resistance test
- Earth Loop Impedance test
- Earth Loop Resistance test
- Earth Resistance test

Obviously, values such as voltage and frequency are part of every test as well. Secondly, the regulation EN 50110 "Operation of electrical installations" is translated and formed to many national regulations. This regulation is specifically for operation or maintenance of low voltage installations and distribution systems. These installations are mostly in housings, factories or office buildings.

Besides the regulations, the growing number of 'aging' installations as well as the increased product liability are important reasons to test all parts of installations thoroughly.

In order to test all necessary components of any installation and to perform all tests within

the regulations, Nieaf Instruments is offering several installation testers. There are individual testers for parts of the regulation, an installation checker and two combination testers.



The InstallCheck has programmed the minimum and maximum values of several installation tests and therefore can be used as a checking device to check whether the measured value is within the limit of the regulation. The result, OK or not OK, is simply displayed by LEDs on the front of the InstallCheck.

The S-series installation tester range contains 4 individual testers and 1 combination tester (CMB-S).

The RCT-S is a complete and sophisticated RCD-tester. By running the complete test program the quality of the RCD can be indicated. It tests whether the RCD trips on time, if the RCD trips by an earth leakage etc.

In case of an incorrect RCD, the tester will not only indicate if the RCD is wrong, but also why.

The insulation resistance tester IRT-S is designed for measuring the insulation of installations or appliances. The instrument is integrated with 4 DC test voltages for measuring high sensitive installations and heavy machines or ground cables.

To perform a complete earth loop impedance test, the ELT-S is the most convenient tester. Measuring the loop impedance or net impedance is done with a high test current. For three-phase installations, the tester can indicate the phase rotation (left or right) and the net impedance between two phases. This is very helpful in case of a missing neutral.

The handheld and sturdy earth resistance tester ERT-S has four measuring modes.

The integrated UTILITY-mode has been especially engineered for parallel switched earth connections. For this mode, a current clamp is connected to every single earth connection separately.

The CMB-S is the easiest handheld combination tester, engineered for installers who need to test or inspect LV-installations frequently after repair or addition. The tester can measure the most essential parts of the LV-installation, such as earth loop resistance and insulation resistance. The CMB-S can also perform RCD tests.

The most versatile and complete combination tester is the EuroTest. This tester is a portable device for testing, measuring, recording and analysing LV-installations, following the

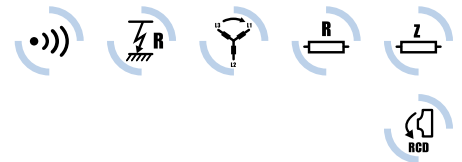
European regulation EN 61557. On top of the tests performed by the installation testers mentioned earlier, the EuroTest can be used

for fuse and cable locating, and the measuring of power, cosinus phi, energy, harmonics, True RMS current and VDR over voltage

protector testing. For these measurements, several probes and adapters are available.

	InstallCheck	RCT-S	IRT-S	ELT-S	ERT-S	CMB-S	EuroTest
RCD testing							
Contact voltage		•				•	•
Trip currents		•				•	•
Trip time	•	•				•	•
Auto test	•					•	
Insulation testing							
50V test voltage							•
100V test voltage			•				•
250V test voltage			•				•
500V test voltage	•		•			•	•
1000V test voltage			•				•
VDR over current protection tester							•
Resistance/impedance							
Earthloop impedance	•			•		•	•
Earth resistance No trip RCD:							
Phase/Earth	•					•	•
Zero/Earth				•			•
Network impedance				•		•	•
Net resistance	•						•
Partial resistance 200mA	•		•			•	
Earth resistance					•		•
Earth resistance 3 points					•		
Earth resistance 4 points					•		•
Soil resistivity					•		•
Earth resistance with current clamp					•		•
Other measurements							
Voltage		•	•	•		•	
Frequency		•	•	•		•	
Phase rotation	•			•			•
Earth resistance							•
Fuse and wire locating							•
Power							•
Cosinus							•
Harmonics							•
Energy							•
Current True RMS							•
PC communication							
RS232 interface		•	•	•	•		
IrDA interface						•	
Memory locations		500	500	500	500	1500	2000

INSTALLCHECK



The design of the InstallCheck is based on the practical approach for testing a LV-installation. One of the main advantages of the InstallCheck is its simple method of use.

The instrument runs through all tests automatically, without displaying the measured values. The InstallCheck has programmed the minimum and maximum values of the regulation of several installation tests, and therefore can be used as a checking device to check whether the measured value is within the limit of the regulation.

The LEDs in the housing of the instrument will indicate the test result (eventually OK or not OK).

This implies that performing a full test, the measured values are within the range of approval for the regulation.

Because of the fully automatic test sequence, a LV-installation can be checked significantly faster than with a classic installation tester. The following tests can be performed by the InstallCheck:

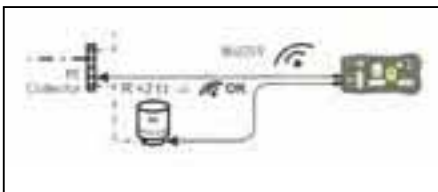
- Continuity test with sound signal
- Insulation resistance test on Phase/Neutral and Phase/Earth
- Phase rotation test
- Phase/Neutral/Earth (wall) plug test
- Resistance test
- RCD trip time test
- Earth loop test Phase/Earth and Neutral/Earth
- Earth potential/test
- Net resistance



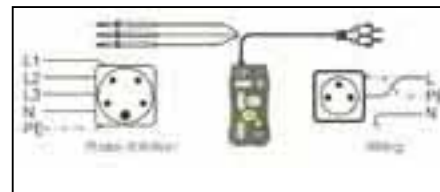
Wall outlet test	8 reference points
Phase/Zero/Earth	Un 440 V, 50 Hz
Phase rotation	
Continuity test	max 2 Ω + 0,5 Ω
Insulation resistance	500 V DC
RCD trip current	30, 100, 300 of 500mA
RCD-contact voltage	25 V by Inom + 5 V
RCD-trip time	300ms Lan - 40ms Lan
RCD-earth resistance	25 V/Inom
Network resistance	1,5 Ω + 0,3 Ω at 0,5A
Display of results	OK or not OK, via LED
Working voltage	220/230/240V
Over current category	CATIII/300V
Standards	SIST HD 384, VDE 0100, BS 7671, 16 th , CEI 64.8
Dimensions	100 x 200 x 50 mm.
Weight	± 600 gram

Article number	626 000 578
Packing	per piece in a box
EAN	-
Including	manual, carry band, network test cable, safety test leads

Continuity test

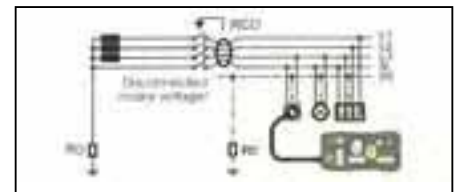


Phase rotation

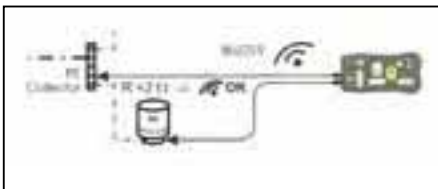


Outlet wiring

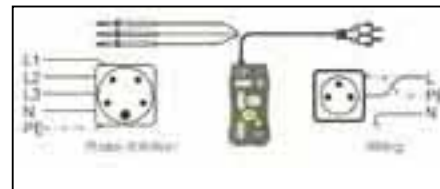
Insulation L/PE and N/PE



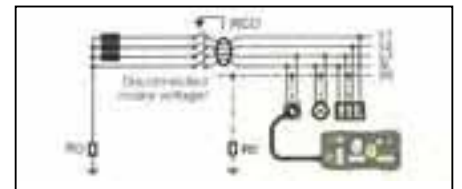
Auto Test (no RCD ☒) Line, Loop



Auto Test (tripout RCD ☒): Line, Loop (R_e), U_c, tΔ, ISO



Auto Test (no-trip RCD ☒): Line, Loop (R_e), U_c



RCD TESTER RCT-S



The RCD-tester RCT-S is engineered to test the RCD completely to the European regulations EN61557 and EN61010 (also selective RCD's). RCD's sensitive to sinusoidal error currents can be tested with the measuring method of this tester as well.

The following tests can be performed by the RCT-S:

- Contact voltage
- Trip current of the RCD
- Trip time of the RCD
- Voltage measuring Phase – Earth
- Frequency

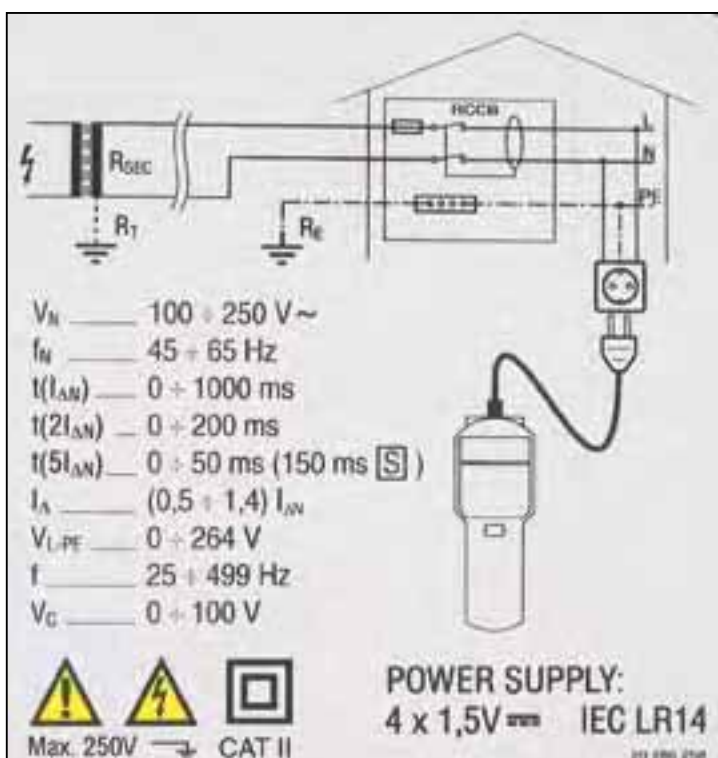
Testing the RCD is of essential importance. The regulations even subscribe the need to test RCD's and (earth) leakage protection devices frequently. In many cases the RCD is supposed to trip within 300 ms after detecting an earth leakage in the top half of the nominal trip current. This means that in case of a 30mA RCD, within 300-ms the voltage needs to be switched off automatically when the earth leakage is over 15mA.

The RCT-S has an internal memory with 500 locations for storing the measured values. The stored values can be downloaded to the software on a PC via the RS232 port.

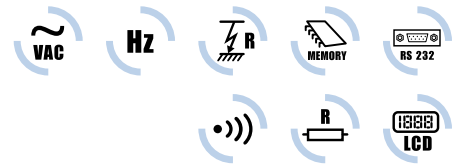


Measurement range voltage measuring	0 – 250 V AC
Measurement range frequency measuring	25 – 499 Hz
Trip time	
0,5 x Inom	0 – 2000ms
1 x Inom	0 – 2000ms
2 x Inom	0 – 200ms
5 x Inom	0 – 50ms
Trip current	(0,5 – 1,4) x Inom
	1 x Inom 0 - 2000ms
Contact voltage	0 – 99,9V
Memory	500 locaties
Output	RS232, serial 4800 Baud
Over voltage category	CATII/ 600V CAT III/300V
Dimensions	290 x 110 x 65 mm.
Weight	± 900 gram

Article number	626 000 349
Packing	per piece in a box
EAN	-
Including	manual, test lead



INSULATION RESISTANCE TESTER IRT-S



The insulation resistance tester IRT-S is engineered for accurate measuring of LV-installations and appliances according the EN61557 regulation. The tester has been developed to measure voltage, frequency and continuity. Also insulation resistance of high sensitive parts and even heavy machines or ground cables can easily be measured with the four different test voltages.

The following tests can be performed by the IRT-S:

- Insulation resistance with a test voltage of 100 V DC
- Insulation resistance with a test voltage of 250 V DC
- Insulation resistance with a test voltage of 500 V DC
- Insulation resistance with a test voltage of 1000 V DC
- Partial resistance of earth connection (200mA)
- Voltage
- Frequency

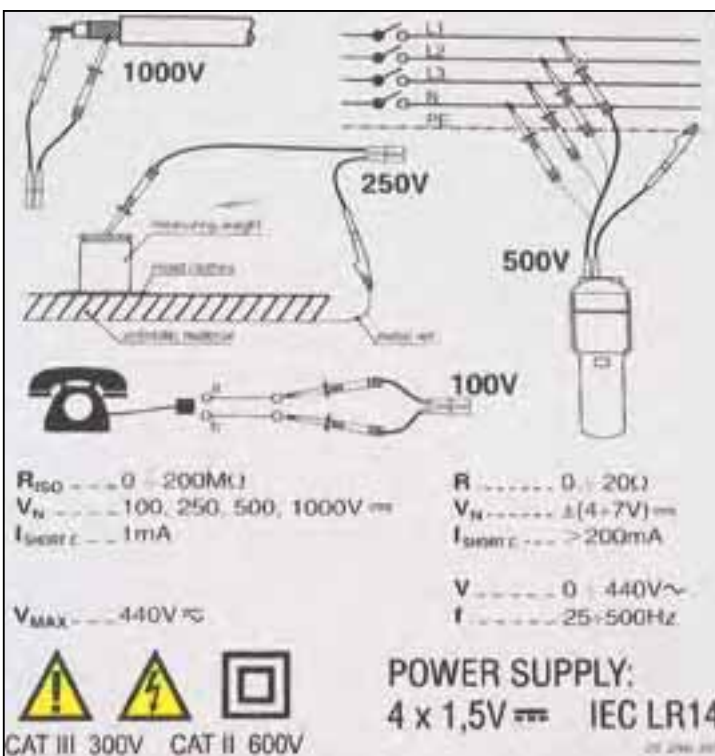


The IRT-S has an internal memory with 500 locations for storing the measured values. These stored values can easily be transferred to a PC (via the RS232 port) to be used in the software.

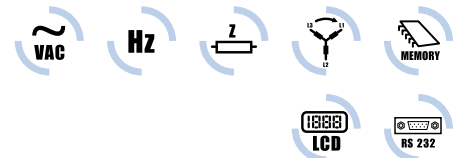
Measurement range voltage measuring	0 – 440 V AC
Measurement range frequency measuring	25 – 199,9/200 - 500 Hz
Insulation resistance	100 – 250 – 500 – 1000V DC
Measurement range (MΩ)	0 -199,9 MΩ
Partial resistance earth wire	0 – 20 Ω
Memory	500 locations
Output	RS232, serial 4800 Baud
Over voltage category	CATII/ 600V CAT III/300V
Dimensions	290 x 110 x 65 mm.
Weight	± 750 gram

Article number	626 000 346
Packing	per piece in a box
EAN code	-

Including	manual, test leads, test probes, alligator clamp
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EARTH LOOP TESTER ELT-S



The Earth Loop Impedance Tester ELT-S has been engineered especially for measuring the phase rotation, earth loop resistance via neutral (N), earth loop impedance via phase (L) and net impedance of LV-installations, all according to the EN61557 regulation. The instrument is fully electronic and can perform line and loop impedance on single- or three phase systems. It is also possible to measure the loop resistance between neutral and earth without tripping the RCD's.

The following tests can be performed by the ELT-S:

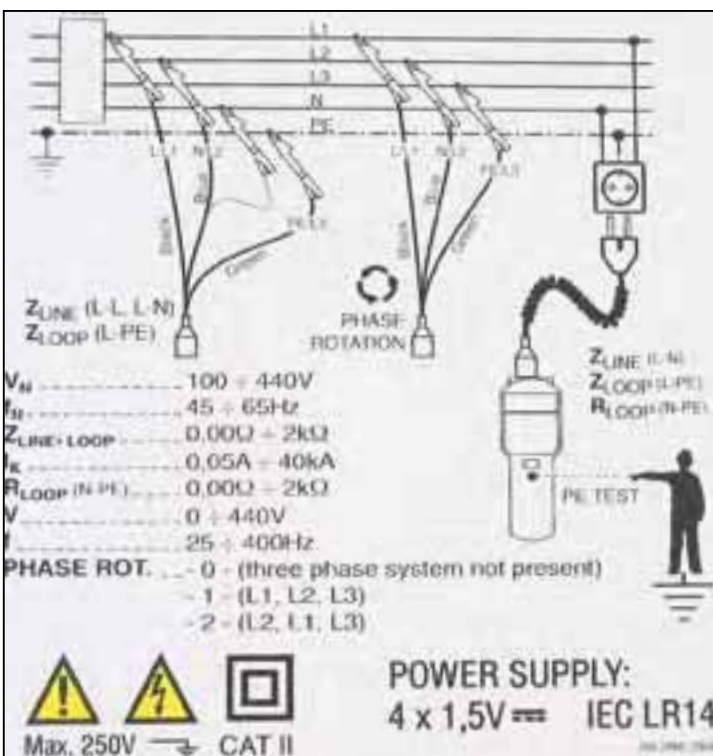
- Earth loop impedance
- Earth loop resistance between neutral and earth
- Prospective short circuit current (Ipsc)
- Net impedance between phase and neutral lines and between two phase lines on a three phase system
- The condition of the protective earth potential (safe or dangerous)
- Voltage
- Frequency three phase rotation field



The ELT-S has an internal memory with 500-locations for storing the measured values. These stored values can easily be transferred to a PC (via the RS232 port) to be used in the software.

Measurement range	0 – 440 V AC
voltage measuring	
Measurement range	25 – 199,9 / 200 - 500 Hz
frequency measuring	
Network impedance Phase-Zero/	
Phase-Phase/Phase-Earth	0 ... 1999 Ω
Potential short-circuit current	
Phase-Zero/Phase-Phase	0.06 ... 40k
Earthloop resistance	0 – 199,9 Ω
Zero-Earth	
Memory	500 locations
Output	RS232, serial 4800 Baud
Over current category	CATIII/ 600V CAT III/300V
Dimensions	290 x 110 x 65 mm.
Weight	± 900 gram

Article number	626 000 347
Packing	per piece in a box
EAN	-
Including	manual, network testlead



EARTH RESISTANCE TESTER ERT-S



The Earth Resistance Tester is developed for measuring of the earth resistance, possibly with the use of a special current clamp for measuring the soil resistivity on LV-installations according the EN61577 regulation.

The following tests can be performed by the ERT-S:

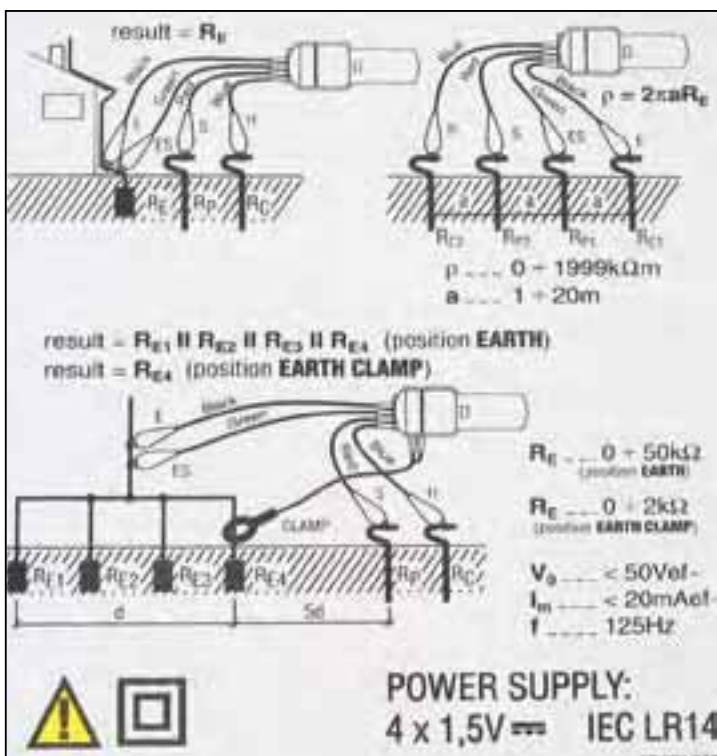
- 2-point earth resistance
- 3-point earth resistance
- 4-point earth resistance
- earth resistance by current clamp ('UTILITY' method)
- soil resistivity ('WENNER' method)

The integrated 'UTILITY'- measurement is especially designed for measuring partial earth resistance at parallel earth connections. This is being done by using a current clamp. This clamp is optional (ERT-a7). The ERT-S has an internal memory of 500 locations for storage of the measured values. These stored values can easily be transferred to a PC (via the RS232 port) to be used in the software.



Earth resistance 2- & 3-point	0 - 50,0kΩ
Earth resistance UTILITY	0,5 - 2,00kΩ
Soil resistivity	0 - 1999kΩ
Memory	500 locations
Output	RS232, serial 4800 Baud
Over voltage category	CATIII/ 600V CAT III/300V
Dimensions	290 x 110 x 65 mm.
Weight	± 900 gram

Article number	626 000 348
Packing	per piece in a box
EAN	-
Including	manual, test leads, earth probes, wire tracers



COMBINATION TESTER CMB-S



The Combination Tester CMB-S or Combi Compact is one of the most compact portable combitesters available. The instrument is designed especially for installers or maintenance people who frequently need to check or inspect LV-installations after modification or addition. The tester can inspect, measure and test different kinds of RCD's (normal and selective), net or loop impedance and (insulation) resistance on LV-installations, according to the EN61557 regulation. Voltage and frequency can also be measured by the CMB-S.

The CMB-S can perform the following tests:

RCD-test

- Trip out current U_c at a current of $\frac{1}{2} I_{\Delta N}$ or at a current of $2 I_{\Delta N}$ (selective type), without tripping the RCD
- Trip current I_{Δ}
- Trip time t at a current of $\frac{1}{2} I_{\Delta N}$, $I_{\Delta N}$, $2 I_{\Delta N}$, $5 I_{\Delta N}$

LOOP (L-PE) / Net impedance (L-N)

- Loop impedance
- Net impedance
- Short-circuit current
- Check on earth potential (safe or dangerous)
- Insulation test
- Insulation test 500V

Resistance (R)

- Resistance

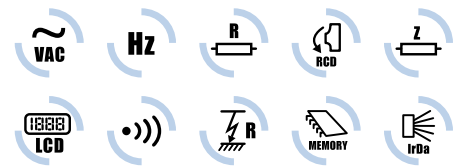
Voltage (V) / Frequency (F)

- Voltage
- Frequency

The CMB-S has an internal memory of 1500 locations for storing the measured values.

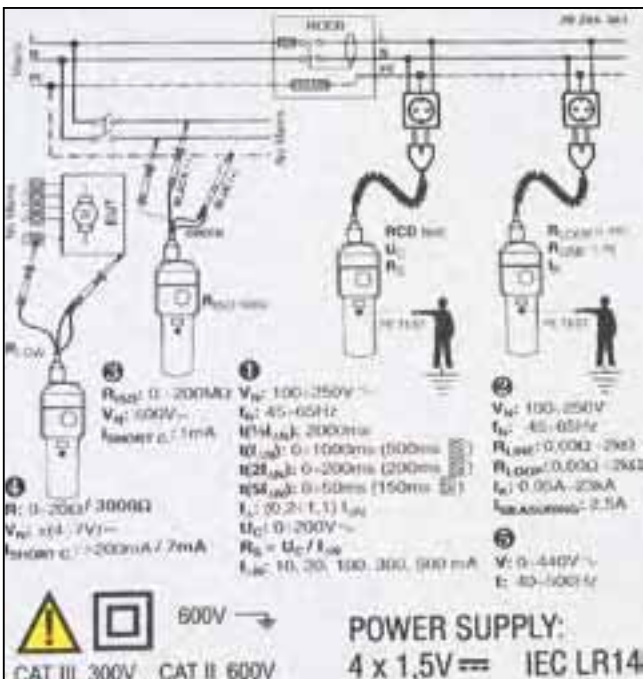
These stored values can easily be transferred to a PC via the InfraRed (IrDa) port, to be used in the software.

The tester is delivered including holster.



Trip time RCD	0.5 Inom 0 - 2000 1*Inom 0 - 1000 2*Inom 0 - 200 5*Inom 0 - 50
Trip current RCD	(0,5 - 1,4) Inom
Contact voltage	0 - 99,9 V
Earthloop resistance	
NO trip RCD	10 10Ω - 10,0kΩ 30 3,3Ω - 3,33kΩ 100 1Ω - 1000Ω 300 0,33Ω - 333Ω 500 0,2Ω - 200Ω
Impedance Phase-Zero / Phase-Earth	0 - 1999Ω
Potential short-circuit current	
Phase-Zero / Phase-Earth	0,06 - 23k A
Insulation resistance	
500 V DC	0 - 199,9 MΩ
Partial resistance earth wire	0 - 2k99Ω
Voltage- & frequency measurement	0 - 440V 40 - 199,9 / 200 - 599 Hz
Memory	1500 locations
Output	IrDa
Over voltage category	CAT II/ 600V CAT III/300V
Dimensions	290 x 110 x 65 mm.
Weight	± 750 gram

Article number	626 000 434
Packing	per piece in a box
EAN code	-
Including	manual, holster, net test lead, spliced test lead, test probes, alligator clamps



EUROTEST COMBINATION TESTER



The Eurotest Combination tester is a complete and portable tester for testing, measuring, recording and analysing LV-installations according to the EN61557 regulation. The tester has a tremendous number of functions and measuring ranges, each with its own sensor or probe.

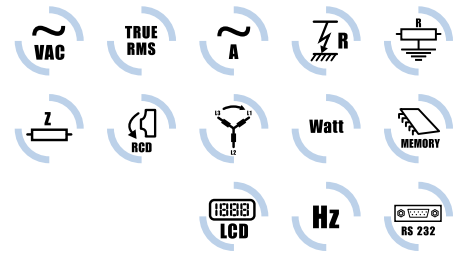
The Eurotest can perform the following tests:

- Insulation resistance
- Continuity
- Earth resistance (4-point)
- Earth resistance (4-point with current clamp)
- Soil resistivity
- Earth loop impedance (max. short circuit current)
- Net impedance (max. short circuit current)
- Touch voltage of RCD at Inom
- Trip time of RCD
- Trip current of RCD
- Earth loop resistance without tripping RCD
- Phase rotation
- Fuse and cable locating
- Power, cos phi, energy and harmonics
- True RMS current
- VDR Overvoltage protective tester

The EuroTest combination tester has an internal memory of 2000 locations for storing the measured values. These stored values can easily be transferred to a PC (via the RS232 port).

By using the band, the tester can be carried around the neck, to allow the user to use both hands to control the probes or accessories.

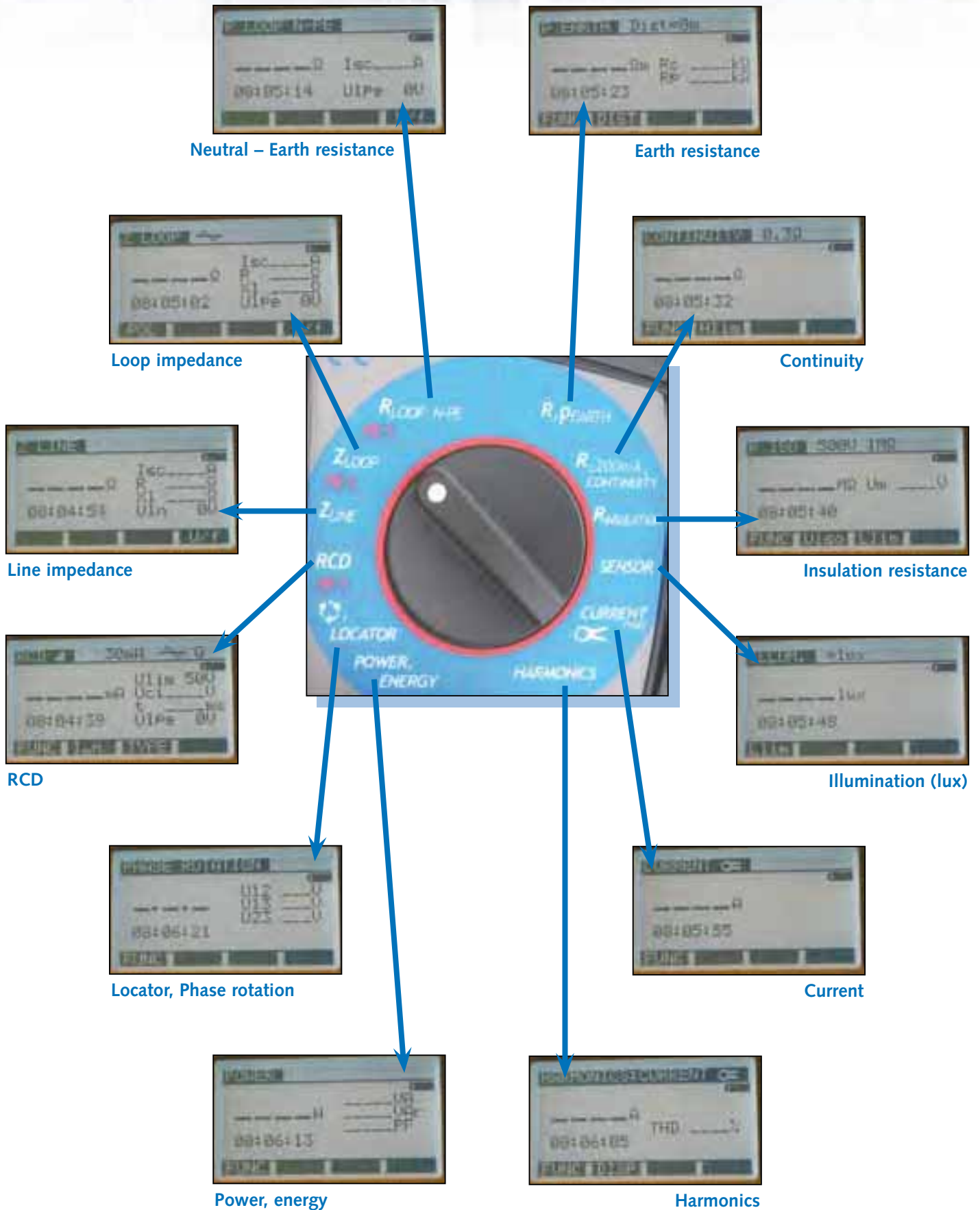
For specific tests, separate probes and adapters are available.



Insulation resistance	50 – 100 – 250 – 500 – 1000V DC
Measurement range	0 – 1 GΩ
Test current	>200mA
Continuity test	
Test voltage	4 – 7 V DC
Earth resistance 4 points	0 – 20 kΩ
Earth resistance 2 points	0 – 19.99Ω 20.0 – 100.0Ω
Soil resistivity	0 – 2000kΩ
RCD trip currents	10, 30, 100, 300, 500, 1000mA (0 at 180°C)
RCD contact voltage	0.00 – 9.99 10.0 – 100 V
Test current	< 0.5 IΔN
RCD trip time	0 – 300 ms (0.5 IΔN, IΔN)
Measurement range (general)	0 – 150 ms (2 IΔN) 0 – 40 ms (5 IΔN)
Measurement range (selective)	0 – 500 ms (0.5 IΔN, IΔN) 0 – 200 ms (2 IΔN) 0 – 150 ms (5 IΔN)
Earthloop impedance	0.00 – 19.99 20.0 – 199.9 200 – 2000 Ω
Network impedance/ at max. short circuit current	0.0 – 19.99 20.0 – 199.9 200 – 2000Ω
Voltage	0 – 440 V
Frequency	45.0 – 65.0 Hz
Current (True RMS)	0 – 200 A
Power	0 – 88kΩ/VA/Var
Energy	0 – 2000kWh
Harmonics	
(Voltage and currents)	Values up to 21 st
Memory	2000 locations
Output	RS232
Over voltage category	CAT II/ 600V CAT III/300V
IP protection	IP44
Power supply	6V (4x 1.5 V IEC LR14)
Dimensions	290 x 110 x 185 mm.
Weight	± 2100 gram

Article number	626 000 449
Packing	per piece in a box
EAN code	-
Including	manual, test leads, connectors, test probes, carry bag, carry band, software, RS232 cable, current clamp 1A/mA, plug commander

FUNCTIONS EUROTTEST



EARTH EXPERT KIT



Complete and professional set of handheld tools/instruments, used by the earth expert, containing:

- Earth resistance tester ERT-S
- Current clamp ERTa7
- Test leads
- 4 Earth probes
- Robust carrying case (MSa6)

Dimensions 350 x 300 x 350 mm.
Weight ± 4,5 kg

Article number 626 000 382
Packing per case
EAN code -

COMBI KIT



Full combination kit for the LV-installation, containing:

- Earth resistance tester ERT-S
- Combination tester CMB-S
- Current clamp ERTa7
- Test leads
- 4 Earth probes
- Robust carrying case MSa6

Dimensions 350 x 300 x 350 mm.
Weight ± 5,5 kg

Article number 626 000 436
Packing per case
EAN code -

INSPECTION KIT



Complete set of installation testers for all electrical installers and inspectors, who have to test and check installations according to the EN61557 regulation, containing:

- Insulation tester, IRT-S
- Earthloop tester, ELT-S
- Earth resistance tester ERT-S
- RCD tester, RCT-S
- Test leads
- ABS suitcase (MSa5)

Dimensions 610 x 430 x 150 mm.
Weight ± 3,8 kg

Article number 626 000 381
Packing per case
EAN code -

INSTALLATION KIT



Basic set of installation testers with the main testers for measuring a LV-installation, according to the EN61557 standard, containing:

- Insulation tester, IRT-S
- Earthloop tester, ELT-S
- RCD tester, RCT-S
- Test leads
- ABS suitcase (MSa4)

Dimensions 460 x 350 x 120 mm.
Weight ± 3,2 kg

Article number 626 000 380
Packing per case
EAN code -

INSTALLMANAGER

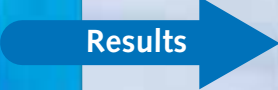
Installation software



The software package to administrate your EN61557/EN50110 inspections of LV-installations and to process these into reports.

InstallManager

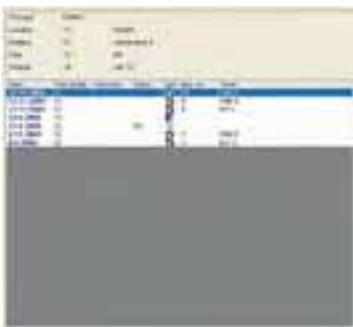
InstallManager is the package to display several
This structure visualises the complete electrical



Display



The complete electrical installations can be recorded and displayed by the tree structure, comparable to Windows explorer. It is possible to register replacement dates as well as test dates.



All measured values together including visual inspections and information on the physical location of the selected object.



Display of the electrical installation visualised in a well-organised tree structure.

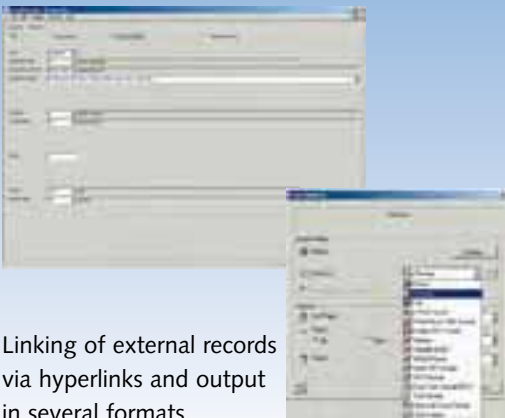


Overview of used test equipment, relations and reports.

EN61557/EN50110 registrations in a well-organized tree structure.
installation.



Several in- & output possibilities



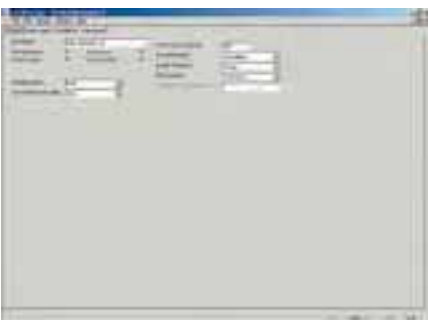
Linking of external records via hyperlinks and output in several formats.

Quick-Access



Easy navigation and loading of the tree structure with the Quick Access possibilities.

Registration



Installations (and their specific characteristics) are registered easily.

Performance reports



Besides test certificates and measuring values, standard performance reports can be printed. The layout of the reports can be customised by an editor.



InstallManager is the software package to register and maintain several registrations in a well organised tree structure and to visualise the electrical installation. All registrations are recorded on certain locations. You can classify these locations yourself. Five layers are available in the software.

With InstallManager software, you are able to register the complete electrical installation and to visualise this in a tree structure, including distribution boxes, wall sockets, fittings, etc. It is possible to register replacement dates of e.g. lamps, but also the test dates, even the data of several installation testers.

InstallManager can be used in combination with Nieaf Instruments installation testers and other brands.

InstallManager offers:

- Registration of all performed inspections
- Printing of certificates and performance reports with customised lay-out
- Clear graphic display of all installations
- Easy navigation
- Complete network support
- Extensive sort and selection possibilities
- Quick access menu with basic functions
- Several output possibilities

The data and report files can easily be sent by email. The total package includes CD-ROM, manual and communication cable.



Two versions of InstallManager are available:

LITE version (for installers)

After testing and approving of an installation, the data from the installation tester can be downloaded in InstallManager LITE and test certificates can be printed.

PRO version (for inspectors)

With InstallManager PRO, the installation characteristics are recorded in the tree structure and saved for next inspections (as a PDF-file or printed as test certificates).

Minimal system requirements:

- | | |
|----------------------------|-----------------------|
| - PC processor of 400MHz | - 20 Mb free HD |
| - MS Windows 98/NT/2000/XP | - VGA-Monitor 800x600 |
| - 64 Mb RAM | - CD-ROM player |

MEGOHM METERS



Insulation Resistance Tester NK500 (1950)



The general functions of these instruments are concentrated to the characteristics of the insulation material. These characteristics are heavily influenced in case the material is under severe circumstances for a long(er) period of time.

The use of high(er) DC voltages to measure high(er) insulation resistances has been well accepted and is the easiest and most reliable way. The actual used test voltage depends per type of product and its regulation. Appliances designed for use in a LV-installation are usually tested with a test voltage of 500 V DC. The insulation resistance is supposed to have a minimum value of 500kΩ.

MegOhm meters are designed to test appliances and installations with a high(er) test voltage, for instance engines, cables, transformers etc.



They show the direct relation between the insulation material and the test voltage or even between the insulation material and the test period as well as the recovery after de-charges. The quality of the insulation,

based on the value of the insulation resistance, can lead to the decision to repair, maintain or even replace the tested equipment. The MegOhm meters are also used to test components of over current protecting devices. Each regulation allows that DC Voltage can be used as an alternative for testing the insulation breakdown. In order to do this correctly, a test voltage needs to be connected to the insulation for a certain period of time, In case there is no breach or sign of breaking insulation, the test is positive.

An example for such case is the EN/IEC 61010-1: DC test voltage for CAT II/300V is 1880V (basic insulation) or 3060V (double insulation).

For testing transmission and/or distribution lines and 'middle voltage' distribution systems a 10, 15 and even 20 kV tester is available within the portfolio. This suitcase shaped sturdy instrument is especially engineered for heavy field measurements. These testers can also be used for the detection cable defects.

ISO 5000



The ISO 5000 is an electronic insulation resistance tester with a resistance range of 500kΩ to 500GΩ and an analogue indication. The instrument is engineered to measure and analyse the insulation resistance and safety of motors, machines, ground cables, transformers etc. The tester also measures AC and DC voltage up to 600 V. The logarithmic scale clearly indicates the value.

During the development of the tester, the engineers paid special attention to the safety standards (IEC1010) and the requirements of the user. Under normal circumstances, 2.500 measurements can be performed on a stand-alone base. The practical and robust suitcase shaped housing includes special storage space for probes, leads and other accessories to make the tester an easy device to use in the field. The integrated battery supply (4x 1,5V-LR20) makes the instrument suitable for the stand-alone use.

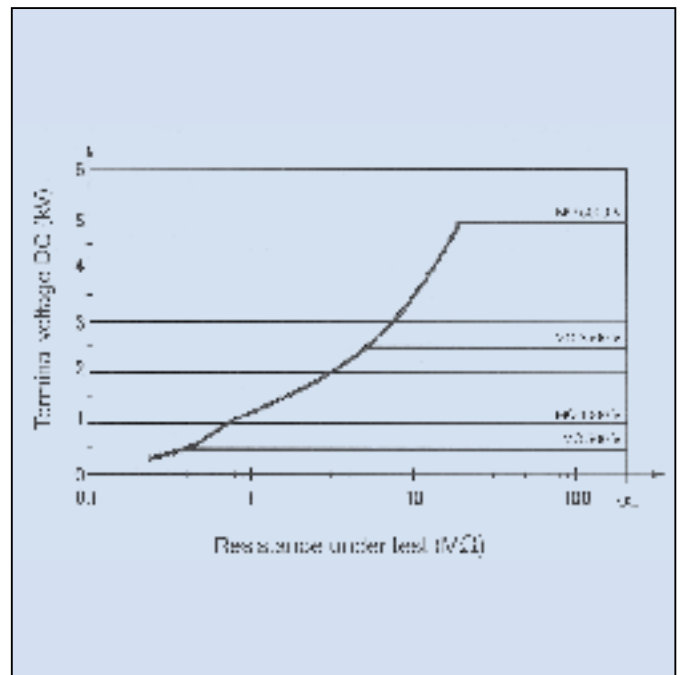
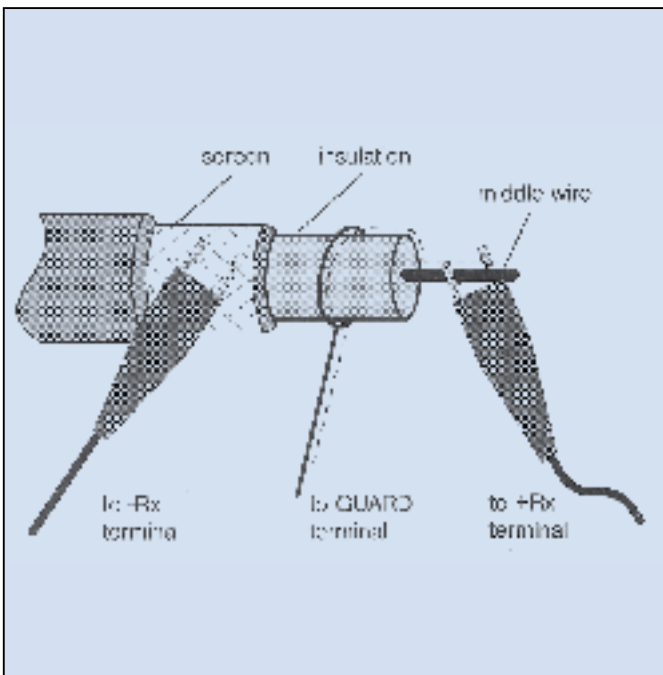


Insulation resistance	
measurement range	500kΩ – 500GΩ
Test currents	500, 1000, 2500, 5000 VDC
Short-circuit currents	1,3 mA
Indication	Logarithmic
Phase discharge	Automatic
Measurement range voltage	0 – 600 V AC/DC
DC input resistance	3MΩ
AC input resistance	1.35 MΩ
Indication	Linear

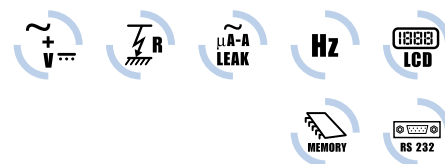
General	
Power supply	Batteries, 4 x 1.5 V DC
Low battery indication	Red LED
Independent function	2000 – 2500 measurements
Standard	IEC 1010
Dimensions	345 x 130 x 250 mm.
Weight	± 4,5 kg

Article number	626 000 260
Packing	per piece
EAN code	-

Including	manual, test leads (high voltage)
-----------	-----------------------------------



ISO ANALYSER 5KV



The ISO Analyser 5kV is a complete and digital instrument for testing and analysing the insulation resistance up to 5TΩ, according to the European regulation EN 61557-2. The analyser is a portable instrument including batteries (re-chargeable) for field use.

The tester has many possibilities and functions. The instrument can perform the following tests:

- Insulation resistance from 0,01MΩ to 5TΩ.
- Programmable test voltage from 250V up to 5kV in steps of 50V
- Automatic de-charge of the testobject after performing test
- Capacity measuring up to 50µF
- Insulation resistance measurement to test voltage
- 5 separate testvoltages proportionally selected within the fixed testvoltages
- Selectable timer from 1 second to 30 minutes per step
- Polarisation index PI and dielectric recharge ratio calculation
- Insulation breakdown up to 5500V
- Leakage current measurement
- Voltage from 0 up to 600 V AC/DC
- Frequency

By using the band, the tester can be carried around the neck easily. This leaves both hands free for making notes or holding probes. The LCD-display secures a clear reading of the test values.

The ISO analyser has an internal memory of 1000 locations for storage of the measured values. This data can easily be transferred to the software on the PC via the RS-232 port.

Digital resistance range	0.01 MΩ - 5 TΩ
Test voltage range (DC)	250 V – 5000 V by steps of 50 V
Bargraph	0 – 5 TΩ
Breakdown voltage	0 – 5500 V
Leakage current range	0 – 1.4mA
Voltage range AC/DC	0 – 600 V
Input resistance	3MΩ
Capacitance range	0 – 50µF
Polarisation Index (PI) range	0 – 99.9
Dielectric discharge (DD) range	0 – 99.9
Power supply	7.2 V DC (6 x 1.2 V) NiCd
Battery charger	230 VAC 45-65 Hz 10 VA
Display	LCD with backlight
Over current category	CATIII / 600V
Communication	RS232
Memory	1000 results
Dimensions	265 x 110 x 185 mm
Weight	± 2,3 kg

Article number	626 001 006
Packing	per piece in a box
EAN code	-
Including	manual, test leads (high voltage), probe tips, alligator clamps, soft carrying bag and software



MI 10 KV – MI 15KV – MI 20KV



The Megohmmeters MI10kV, MI15kV and MI20kV are very robust insulation resistance testers to measure up to respectively 2.000.000MΩ, 3.000.000MΩ and even 4.000.000MΩ. With the selectable test voltages, the instruments can also be used for measurements at smaller (LV) installations.

These testers are especially designed to use in the field (stand-alone, due to the integrated battery), to measure transmission/distribution lines, medium voltage distribution systems, etc. They can also detect cable defects.

The test values are easily and accurately read on the analogue scale.

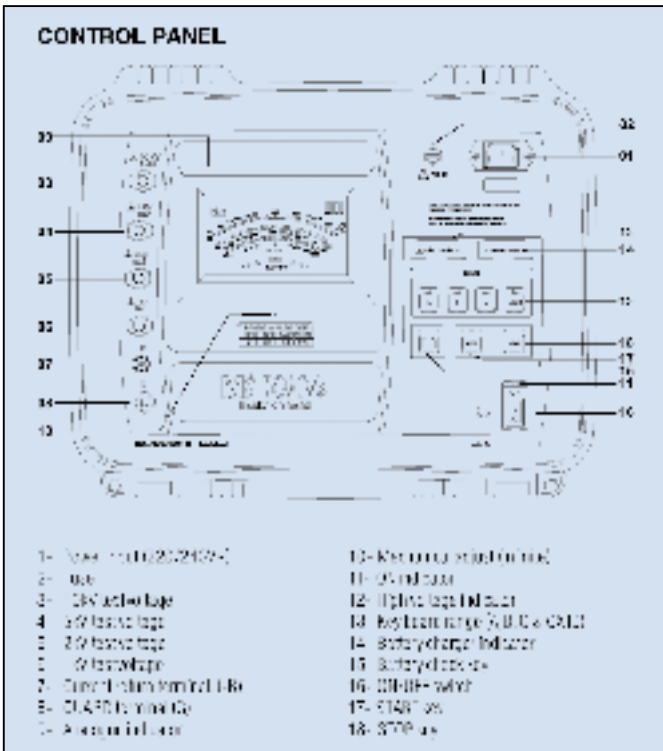
During the development of the tester, the engineers paid special attention to the safety standards (IEC1010-1) and the requirements of the user. The practical, suitcase shaped and robust housing includes special storage for probes, leads and other accessories.

MI10kV	
Insulation resistance	2.000.000MΩ
4 test voltages	1kV, 2kV, 5kV, 10kV
Max. resistance	200GΩ @1kV 400GΩ @2kV 1TGΩ @5kV 2TGΩ @10kV
Short circuit current	500µA
Internal current charging resistance	2MΩ @1kV 4MΩ @2kV 10MΩ @5kV 20MGΩ @10kV
Standard	IEC 1010-1
Rechargeable battery	Internal 12 V 4 Ah
IP Protection	IP54
Dimensions	340 x 300 x 150 mm
Weight	± 7.0 kg

MI15kV	
Insulation resistance	3.000.000MΩ
4 test voltages	1kV, 5kV, 10kV, 15kV
Max. resistance	200GΩ @1kV 1TGΩ @5kV 2TGΩ @10kV 3TGΩ @15kV
Short circuit current	500µA
Internal current charging resistance	2MGΩ @1kV 10MΩ @5kV 20MΩ @10kV 30MΩ @15kV
Standard	IEC 1010-1
Rechargeable battery	Internal 12 V 4 Ah
IP Protection	IP54
Dimensions	340 x 300 x 150 mm
Weight	± 7.0 kg

MI20kV	
Insulation resistance	4.000.000MΩ
4 test voltages	5kV, 10kV, 15kV, 20kV
Max. resistance	1TGΩ @5kV 2TGΩ @10kV 3TGΩ @15kV 4TGΩ @20kV
Short circuit current	500µA + 5%
Internal current charging resistance	10MΩ @5kV 20MΩ @10kV 30MΩ @15kV 40MΩ @20kV
Standard	IEC 1010-1
Rechargeable battery	Internal 12 V 4 Ah
IP Protection	IP54
Dimensions	340 x 300 x 150 mm
Weight	± 7.0 kg

Article number MI10kV	626 000 526
Article number MI20kV	626 000 611
Packing	per piece in a box
EAN code	-
Including	manual, carrying bag, test leads, adapter



POWER ANALYSERS



The quality of low voltage and middle voltage installations is very important. The presence of distortions such as harmonics can have a severe influence on this quality. The European regulation EN 50160 is one of the most important regulations for measurements of LV-installations. The essential values for LV-installations are subscribed in this regulation.



In order to measure and analyse a LV-installation, according to the EN50160, two Power Analysers are available within the Nieaf Instruments program:

The Power Harmonics Analyser PHA3300 is a portable instrument for measuring and analysing single- and three phase systems.

Also irregular or interrupted voltage supplies can be detected or recorded. Data recording is one of the most relevant functions of the instrument. After a period of statistical or periodical analysis, the data can be transferred to the PC software easily.

The Power Quality Analyser PQA6600 is a complete instrument engineered for analysis of the quality of a three-phase system. Basically, the PQA6600 is equal to the PHA3300, but more functions have been included.

The PQA6600 has the following extra features:

- Waveforms measurement
- Fast logging
- Transients measurement
- Flicker analysis

Using these functions identifying the distortions in engines, computers and other appliances is easy.

Depending on the value to be measured, several accessories and probes can be used. For measuring currents, several current clamp adapters are available (see pages 33-34, chapter Current Clamp Adapters). With these adapters, a complete three-phase installation can be measured and analysed up to 3000 Amps.

For optimal analyses of the measured values, the included Windows software can be used.

This software can be used for storing the test data and to make several reports and graphical displays, all according to the EN50160 regulation. Obviously, the data and the reports can be stored and printed. For report modification into a customised report, the data and reports can be exported to .xls-files.



POWER HARMONICS ANALYSER PHA3300

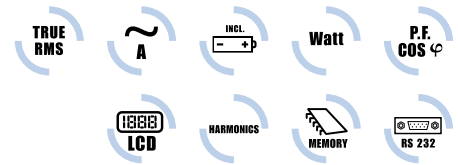


The PHA 3300 is an instrument for measuring and analysing single- and three-phase systems in compliance with the European regulation EN 50160.

Main functions of the PHA 3300 are:

- Real time monitoring, recording and analysing single- and three phase power supply systems.
- Measuring of a wide range of values, such as True RMS voltage, True RMS current, Power/Energy (Watt, VAR and VA), Power Factor/ Cos phi, and Harmonics.
- Internal memory for storage of data (2Mb)
- Calculation of minimum, average and maximum value for use on standard reports.
- Oscilloscope mode for viewing (real-time) and storing of current and voltage waveforms.
- Harmonics measurements up to the 63rd Realtime and stored.
- Energy monitoring and analysis.
- RS232 serial interface for connection to a PC. Windows software for data analysis and instrument controls included.

The power supply of the instrument can be served by a rechargeable battery (max. 5 hours) or mains voltage.

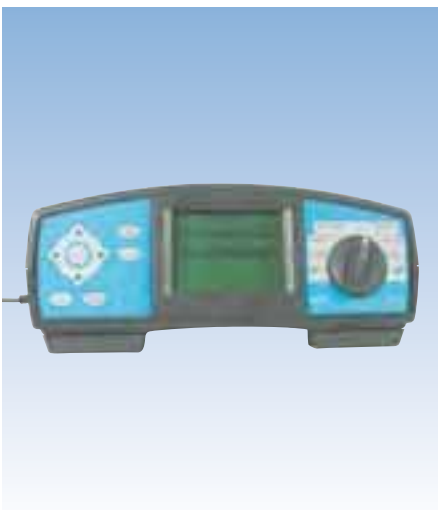


For the specifications for the PHA3300, check page 52-53-54

Dimensions 265 x 110 x 185 mm.
Weight ± 2,1 kg

Article number	626 000 463
Packing	per set in a box
EAN code	-
Including	manual, carrying bag, batteries, test leads, RS232 cable, alligator clamps, extra carrying bag with 3 1000A/1V current clamp adapters, software

POWER QUALITY ANALYSER PQA6600

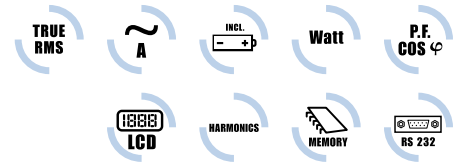


The PQA 6600 is basically equal to the Power Harmonics Analyser 3300. Some extra features and functions are integrated in the instrument for optimal measuring, recording and analysing the quality of single- or three phase systems, in compliance with the European regulation EN 50160.

The extra features/functions of the PQA 6600 are:

- Measuring of waveforms
- Fast logging
- Measuring of transients
- Flicker analysis

The tester has an EN 50160 Auto Mode with reports and results based on this standard.



For the specifications for the PQA6600, check page 52-53-54

Dimensions 265 x 110 x 185 mm.
Weight ± 2,1 kg

Article number	626 000 557
Packing	per set in a box
EAN code	-
Including	manual, carrying bag, batteries, test leads, RS232 cable, alligator clamps, extra carrying bag with 3 1000A/1V current clamp adapters, software

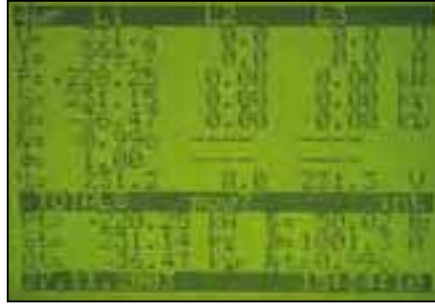
POWER HARMONICS AND POWER QUALITY ANALYSERS

(PHA 3300)



Scope function allows viewing of current and voltage waveforms

(PQA 6600)



Meter menu for display of all measured parameters



Voltage and Current Harmonic Analysis up to 63th component



Accurate Energy Measurement Active & Reactive, Import & Export, Inductive & Capacitive, Separate registers for Total, Sub-total & Last Integration Period



True real-time operation for capturing anomalies, voltage interruptions and power breaks. 2 Mb of memory allows data logging to several months



Configuration menu for setting measuring method, integration period, current scaling factor and selection of signals

SOFTWARE (INCLUDED)

Simple set-up

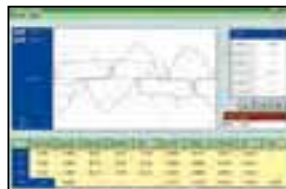


Selection of signals and type of analysis (periodics, anomalies, statistics, EN50160)



Selection of recording time and averaging cycles integration period. Recording can be set also from instrument directly

On line measurements



6 channels oscilloscope



harmonics up to 63th

Analysis



Over 300 quantities (64 at the same time) can be recorded and stored in this mode. All important quantities and events can be selected:



- average, minimum and maximum voltage and current RMS values
- harmonics and THD of voltage and current

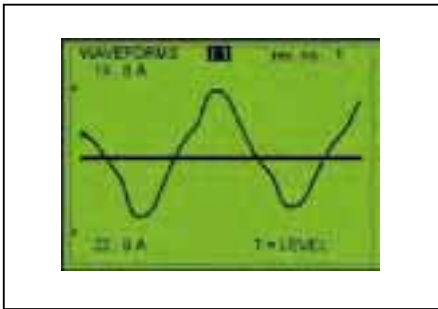


- voltage events and anomalies (interruptions, dips, sags), type and duration
- particular and total power

SPECIAL FUNCTIONS FOR POWER QUALITY ANALYSER

Special tools enable a detailed, time domain based signal analysis. They represent a powerful, modern troubleshooting tool for solving all kinds of problems, which are appearing in power distribution systems. The user can choose between three modes, differing in terms of sampling speed, trigger possibilities and recording time.

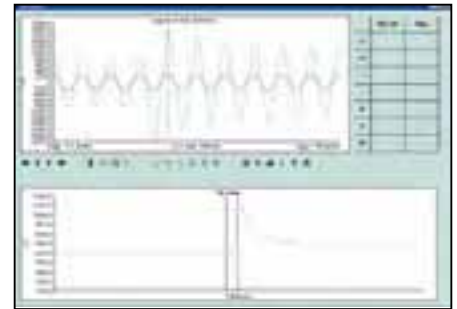
WAVEFORMS



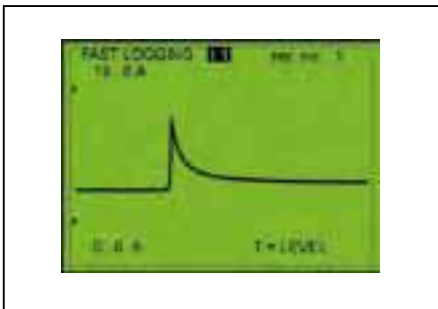
Recording of voltages and currents with 128 samples/period. Half period RMS values of recorded quantities are also calculated and shown in this mode. Best suited for:

- monitoring of switching phenomena,
- locating of noise and disturbance sources,
- defining disturbance type,
- locating excessive harmonics sources.

Typical problems that can be solved by WAVEFORM analysis: capacitor banks switch over, transformer overheating, UPS problems, SMPS failures, etc.



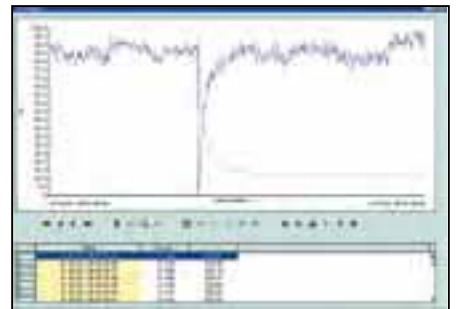
FAST LOGGING



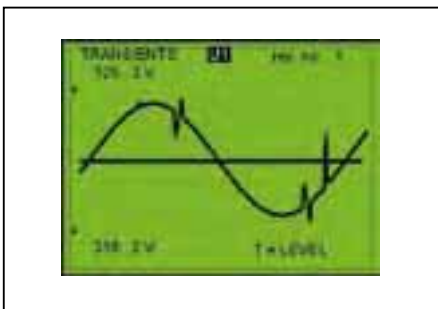
Recording of half period RMS voltage and currents values. Recommended when record length is critical and signal's details are not of importance. Best suited for:

- observing start up and inrush events,
- locating impedance problems,
- long term analysing of unstable mains.

Typical problems that can be solved with FAST LOGGING analysis: too high inrush currents of large motors, undersized fuses and installation wiring, too weak voltage source, etc.



TRANSIENTS

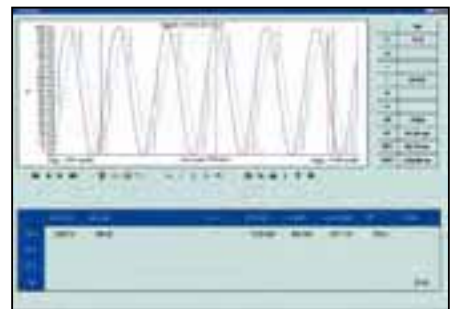


The recording mode with fastest sampling rate that the instrument can provide. Up to 50 kHz transients detect ability in this mode.

Best suited for:

- monitoring atmospheric discharging,
- analysing switching problems,
- detailed analysing of high frequency noise and notching.

Typical problems that can be solved with TRANSIENT analysis: frequency noise, voltage spikes caused by switching of capacitor banks, etc.



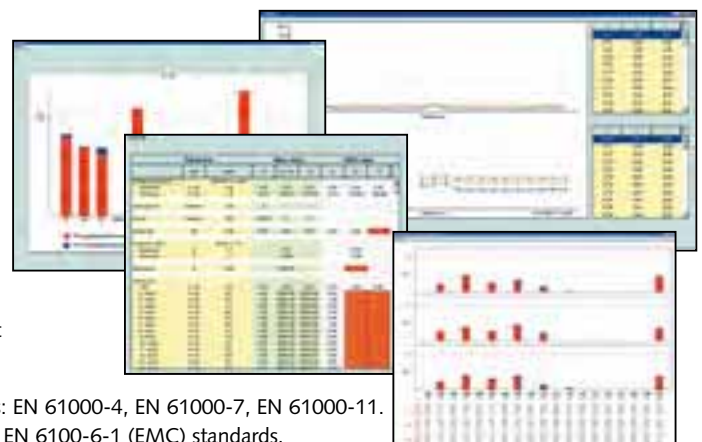
EN 50160

Usually the NET quality is tested according the EN 50160 standard. The PQA6600 can be set up to perform a basic measurement according this standard. Results of such measurements are an automatically generated report with good/fault indication.

REPORT

The (included) software contains a large number of possibilities for reproduction of graphics for several measurements. It is also possible to generate a complete EN50160 report. Graphics, reports and measurement values can transferred to Excel or Word for further processing.

The PHA3300 and PQA 6600 perform tests according the following standards: EN 61000-4, EN 61000-7, EN 61000-11. The instruments are produced according EN61010-1 (safety), EN50081-1 and EN 6100-6-1 (EMC) standards.



Technical Specifications – PHA 3300 / PQA 6600			
Voltage 3 Fully differential channels Input Voltage Range Resolution Accuracy Frequency range	10 - 550Vrms L-N, 900Vrms L-L 0.1V ± 0.5% of readings ± 2 digits 43 - 68Hz	Frequency Ni-Cd batteries Internal battery charger	42 - 63Hz provides full operation for up to 5 hours
Current Display range Resolution Accuracy Permissible overload	0.02V – 1V / 0.2 A – 3000A (depending on current clamp type) 0.3mV (0.3A) ± 0.5% of readings ± 2 digits + current clamp accuracy 50% *sinusoidal current	Display Display type Multimeter Oscilloscope Harmonics histograms Configuration and programming menus	LCD graphic 160 x 116 display with LED backlight quantities in numerical mode current and voltages waveforms
Computer and DISPLAYED quantities Scope Waveforms Power factor, Frequency, Phase sequence THD and Crest factor:	3x U, 3x I 3x (U _{rms} , U _{avg} , U _{max}) 3x (I _{rms} , I _{avg} , I _{max}) U, I	Internal memory Communications Opto isolated RS 232 serial interface for connection to PC Baud rate	2Mbytes eeprom 2400 – 57600
Meter 3x U _{rms} , 3x I _{rms} , I _{none} , Frequency, cos phi P, Q, S Power factor	(phase & total) (phase & total)	Extra features for PQA 6600:	
Spectrum Harmonics THD U _{rms} , I _{rms}	DC...63 (on display DC...25) percentual and absolute amplitudes for selected quantities	EN50160 Analysis mode Voltage dips, swells, sages and breaks Voltage unsimetry, Voltage RMS values, Frequency Harmonics Fickers Plt Pst	resolution 10 ms, no gaps up to 43th component no gap
Recorder Integration period Statistics analysis of each period (20 ms.) Voltage anomalies – based on half period (10 ms) and selected window (± Un), configurable recording registers. Recording of periods (selectable data, max. 64 parameters.)	1 sec – 900 sec	Flicker measurement	The instrument computes flickers according to IEC 61000-4-15
General Overvoltage category Pollution category Max. voltage between terminals Max. voltage against ground Protection degree	CAT III / 600V 2 900V 550V IP54	Waveforms Sampling rate Trigger Buffer Channels Pf, cos phi Crest factor, THD U, I Frequency, Harmonics magnitudes / direction positive / negative	128 scans / period level, manual, timer Min 10 periods of pre/post size. Up to 7812 periods can be recorded 3x U, 3x I, U lines, min/max rms values, avg
Dimensions Size (H x W x D) Weight (without accessories, with batteries)	265 x 110 x 185 mm 2.1 kg	Fast logging Sampling rate Trigger Buffer Channels	128 scans / period min / max avg rec level, manual, timer each half period pre / post size, up to 166 minutes of recording 3x U, 3x I, Single or multichannel mode
Power requirements Voltage operating range	230 Vac (±10% 20%) (110 Vac on request)	Transients Capturing Trigger Buffer Channels	>20 µs transient detect ability level, slope, manual Min 10 periods of pre/post size. Up to 1000 periods can be recorded 3x U, 3x I, Single or multichannel mode

ACCESSORIES

TEST TOOLS



626 000 483

Protective bag for EasyAmp/
EazyVolt I & II/EasyTester



626 000 620

Blue protective holster for
EasyAmp/EazyVolt I & II/
EasyTester



626 006 000

Test lead, red
with 2 mm. probe



626 006 001

Test lead, black
with 2 mm. probe



626 006 024

Probetips for EazyVolt, 4 mm.



626 006 002 (red)

626 006 003 (black)

Alligator clamp, 2 mm.



626 000 309

Current clamp adapter
for LineSpotter



626 000 637

Mini current clamp adapter
for LineSpotter



626 005 037

EasyPhase testleads
(red, yellow, blue)



626 000 654

Selective probe for LineSpotter

ENVIRONMENTERS



626 006 007

Thermocouple type K
for NI T82 en NI T8820



626 006 025

Lid for NI L204









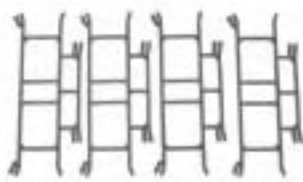
















626 006 026






Sponge for NI S102

MULTIMETERS AND CURRENT CLAMPS			
 <p>626 006 011 Protective bag BT 2, NI 31, NI 1715</p>	 <p>626 006 012 Protective bag BT 3, NI 30</p>	 <p>626 006 013 Protective bag BT 4, NI 333</p>	 <p>626 006 014 Protective bag BT 5, NI 39T, 11-series</p>
 <p>626 006 015 Protective bag BT 6, NI 39MR</p>	 <p>626 006 016 Protective luxury bag DMM tas, B7</p>	 <p>626 006 027 Holster NI 70 series</p>	 <p>626 006 009 Holster NI 90 series</p>
 <p>626 006 010 Holster NI 305R</p>	 <p>560 410 027 Test lead 1 meter, red</p>	 <p>560 410 028 Test lead 1 meter, black</p>	 <p>560 410 033 Test lead 1,5 meter, red, stackable</p>
 <p>560 410 034 Test lead 1,5 meter, black, stackable</p>	 <p>626 006 000 Test lead, red, with 2 mm. probe</p>	 <p>626 006 001 Test lead, black, with 2mm. probe</p>	 <p>626 006 002 (red) 626 006 003 (black) Alligator clamp, 2 mm.</p>
 <p>560 010 092 Alligator clamp, zwart, 4 mm.</p>	 <p>626 006 017 Fuse 15a/600V NI 305R</p>	 <p>626 006 018 Fuse 1a/600V NI 305R</p>	 <p>626 006 019 Fuse 1a/500V</p>

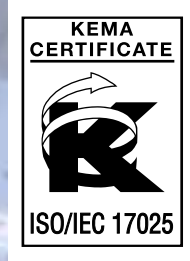
MULTIMETERS AND CURRENT CLAMPS			
 <p>626 006 020 Fuse 16a/500V</p>	 <p>626 006 023 Fuse 10a/500V</p>	 <p>560 410 029 (red) 560 410 030 (black) Probe 4 mm.</p>	 <p>626 006 004 Probe, red 2 mm., short</p>
 <p>626 006 021 Probe red, flexible</p>	 <p>626 006 005 (red) 626 006 006 (black) Connector, 4 mm., touch proof</p>	 <p>626 006 007 Thermocouple, type K adapter</p>	 <p>626 006 008 RS232 cable (NI 305R/NI 79C)</p>
 <p>626 005 026 Multimeter hanging kit</p>			
INSTALLATION TESTERS			
 <p>626 000 435 (blue) 626 000 461 (red) 626 000 579 (grey) Protective holster</p>	 <p>626 000 312 RCTa1, standard measuring lead for RCT-S with shuko power plug, 2 meter</p>	 <p>626 000 313 RCTa2, special measuring lead for RCT-S, 3 separate connections incl. safety alligator clamps</p>	 <p>560 410 027 Test lead 1 meter, red</p>

INSTALLATIONTESTERS			
 <p>560 410 028 Test lead 1 meter, black</p>	 <p>560 410 029 (red) 560 410 030 (black) Probe 4 mm.</p>	 <p>626 000 301 ELTa1, standard measuring lead for ELT-S/CMB-S with shuko power plug, 2 meter</p>	 <p>626 000 302 ELTa2, special measuring lead for ELT-S, 3 separate connections incl. safety alligator clamps</p>
 <p>626 000 303 ERTa1, standard measuring lead for ERT-S, black, 4,5 meter</p>	 <p>626 000 304 ERTa2, standard measuring lead for ERT-S, green, 4,5 meter</p>	 <p>626 000 305 ERTa3, standard measuring lead for ERT-S, red, 15 meter</p>	 <p>626 000 306 ERTa4, standard measuring lead for ERT-S, blue, 20 meter</p>
 <p>626 000 307 ERTa5, 4 standard earth pins for ERT-S, 25 cm.</p>	 <p>626 000 308 ERTa6, 4 standard cable supports for ERT-S</p>	 <p>626 000 379 ERTa8, industrial cable reel for earth testing, 2x 25m.</p>	 <p>626 000 442 ERTa10, measuring lead for ERT-S, red, 20 meter</p>
 <p>626 000 443 ERTa11, measuring lead for ERT-S, blue, 40 meter</p>	 <p>626 000 492 CMBa2, measuring lead for CMB-S, 3 separate connections incl. safety alligator clamps</p>	 <p>626 000 524 (CMBa3, blue) 626 000 525 (CMBa4, black) Testlead</p>	 <p>626 000 466 IrDA, interface for CMB-S</p>

INSTALLATIONTESTERS			
 <p>626 000 314 MSa3, standard safety alligator clamps (3 pcs) for RCS-S, IRT-S</p>	 <p>626 000 375 MSa4, ABS carrying case for 3 installations testers, blue</p>	 <p>626 000 376 MSa5, luxurious, robust, lockable, aluminium profile carrying case for 4 installation testers and accessories</p>	 <p>626 000 377 MSa6, luxurious, robust, lockable, aluminium profile carrying case for 3 installation testers and accessories</p>
 <p>561 260 036 MSa7, universal carrying bag for installation testers</p>	 <p>626 000 587 Universal, nylon, carrying band for 1 installation tester</p>	 <p>626 000 636 Eurotest, plug commander</p>	 <p>626 000 622 Eurotest, fuse/fault/cable locator</p>
 <p>626 000 633 Eurotest, lux meter probe</p>	 <p>626 000 647 Eurotest, lux meter probe, type C</p>	 <p>626 000 645 Eurotest, earth test set, 20 meter</p>	 <p>626 000 635 Eurotest, earth test set, 50 meter</p>
 <p>626 000 637 Eurotest, mini current clamp for UTILITY or CITY measurements</p>	 <p>626 000 309 Eurotest, low-range current clamp 1 A/1 mA</p>	 <p>626 000 649 Eurotest, cable 4x 1 meter</p>	 <p>626 000 648 Eurotest, cable, 3-phase</p>

INSTALLATIONTESTERS			
			
<p>626 000 634 Eurotest, adapter, 3-phase</p>	<p>500 181 291 RS232 communication for Pats-W, Patmanager, Installmanager software</p>	<p>626 000 664 USB to RS232 adapter</p>	
MEGOHM METERS			
			
<p>626 000 651 High voltage kabel set (2 measu- ring lead, 2 alligator clamps)</p>			
POWER ANALYSERS			
			
<p>626 000 577 Transformer, 5a-1V</p>			

SERVICE AND CALIBRATION



We offer this experience and expertise to you, the customer, thru our repair division and helpdesk.

The service to support you.

- Calibration of all brands and types of test and measurement equipment.
- Repair of all Nieaf Instruments equipment.
- Helpdesk to support the operation of all Nieaf Instruments equipment and matching software.

Calibration

Nieaf-Smitt has a professional calibration center. You can have every type of measurement equipment calibrated. (multimeters, current clamps, temperaturemeters, installation testers, power meters, safety testers).



You receive an anual automatic notice to have your instruments calibrated after registration in our calling system. This way you do not have to worry about the validity of the calibration of your instruments.

Repairs

Nieaf-Smitt has a modern repair division, meting the ISO 9001 standard. Faults are dealt with quickly and with competence.

Over the years Nieaf-Smitt has managed to get a huge experience, that will benefit the customer as well.

Calibration possible of all brands!

Helpdesk

It is possible to address your questions concerning the operation of a tester, the performance of a test or software to the helpdesk. Your requirements for extra explanation or instruction to multiple persons are also directed to this division.

The helpdesk, calibration & reparation divisions can be contacted during (CET) 8.00-17.00 on the following phone number +31 (0)30 2850285 or via email: helpdesk@nieaf-smitt.nl.





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