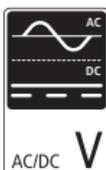
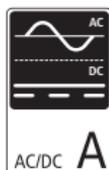


MultiMeter-Pocket



DE 02

GB 10

NL 18

DK 26

FR 34

ES 42

IT 50

PL 58

FI 66

PT 74

SE 82

NO 90

TR 98

RU 106

UA 114

CZ 122

EE 130

LV 138

LT 146

RO 154

BG 162

GR 170

Laserliner[®]
Innovation in Tools



Read the operating instructions and the enclosed brochure „Guarantee and additional notices“ completely. Follow the instructions they contain. Safely keep these documents for future reference.

Function/Application

Multimeter for taking measurements in the range of overvoltage category CAT III up to max. 1000 V. The meter can be used to measure DC and AC voltages and direct and alternating currents within the specified ranges, as well as for continuity and diode testing. The meter is also fitted with a non-contact voltage detector and has an integrated LED flashlight.

Symbols



Hazardous electrical voltage warning:
Unprotected live components inside the device housing may pose a risk of electric shock.



Danger area warning



Protection class II: The test device has reinforced or double insulation.

CAT III

Overvoltage category III: Equipment in fixed installations and for applications where specific requirements with regard to the reliability and availability of equipment have to be met, e.g. circuit-breakers in fixed installations and devices used in industrial applications which are permanently connected to the fixed installation.

Safety instructions

- Make sure that you always select the correct connections, the correct rotary switch position and the correct range for the measurement to be taken.
- Before measuring or checking the resistance, continuity, diodes or capacitance, disconnect the power supply to the electric circuit. Check that all high-voltage capacitors are discharged.
- Isolate the device from all current sources before opening the battery compartment cover.
- If possible, do not work alone.
- If you have to take hold of the measuring spikes, do so by the grip sections only. Do not touch the measuring contacts whilst the measurement is being taken.
- If the device comes into contact with moisture or other conductive residue, work must not be carried out under voltage. At and above voltages of 25 V AC/60 V DC, the presence of moisture creates the risk of life-threatening electric shocks. Clean and dry the device before use. When using the device outdoors, make sure that the weather conditions are appropriate and/or that suitable protection measures are taken.
- If you are working with voltages higher than 25 V AC/60 V DC, exercise extreme caution. Touching the electrical conductors at such voltages poses a risk of life-threatening electric shocks.
- Do not use the device in environments in which there are conductive particles or where the occurrence of moisture (in the form of condensation, for example) can create transient conductivity.
- The device must only be used in accordance with its intended purpose and within the scope of the specifications.
- If you are taking measurements in the hazardous vicinity of electrical installations, do not work alone and seek guidance from an electrically skilled person before starting work.
- Before taking any measurements, make sure that both the area to be tested (e.g. a line), the test device and the accessories used (e.g. connection cable) are in proper working order. Test the device by connecting it to known voltage sources (e.g. a 230 V socket in the case of AC testing or a car battery in the case of DC testing). Stop using the device if one or a number of its functions fails.

MultiMeter-Pocket

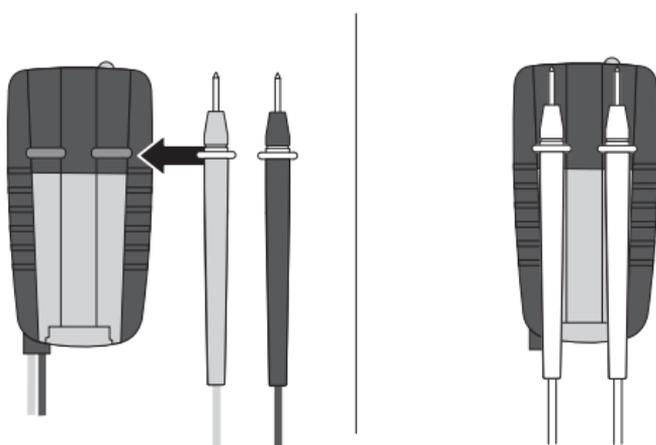
1 Insertion of batteries



2 x 1.5 V type AAA NEDA24A/IEC LR 03

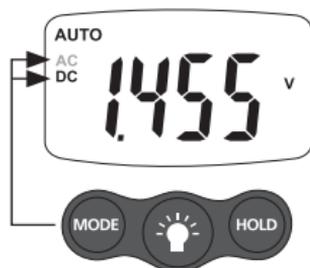
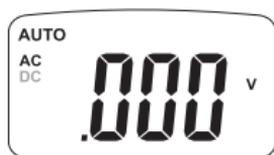
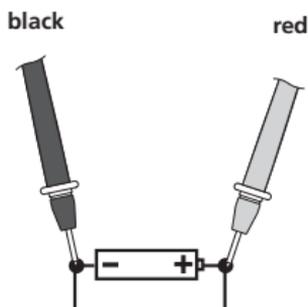
2 Attaching the test prods

In order to avoid the risk of injury, the test prods must always be kept in the holder on the rear of the meter when not in use and during transport.



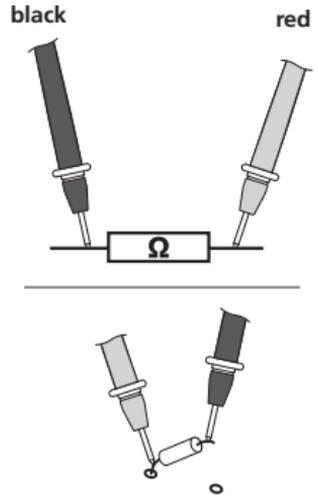
3 V Voltage measurement DC/AC

To take a voltage measurement, turn the rotary switch to position „V” and press the „Mode” button to set the voltage mode (AC, DC). Then connect the measuring contacts to the object to be tested. The measured value acquired and the polarity appear on the display.



4 Ω Resistance measurement

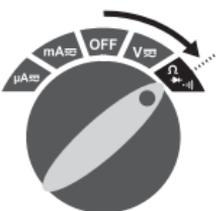
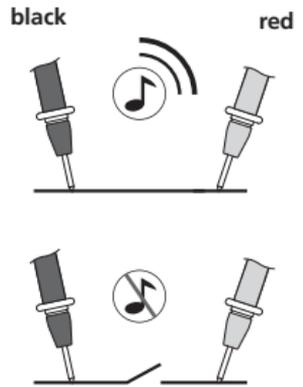
To measure the resistance, turn the rotary switch to position „Ω“. Then connect the measuring contacts to the object to be tested. The measured value acquired appears on the display. If „O.L.“ appears on the display instead of a measured value, either the measuring range has been exceeded or the measuring circuit is not closed or has been interrupted. Resistances can only be measured correctly in isolation; therefore, the components might need to be disconnected from the remainder of the circuit.



! When measuring resistance, to avoid the risk of the results of a measurement being distorted, there must be no traces of dirt, oil, solder spray or other contamination on the test prods.

5 •|) Continuity test

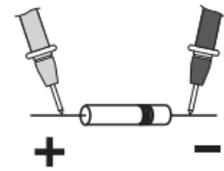
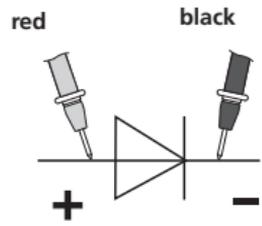
To test continuity, turn the rotary switch to position „Ω“ and press the „Mode“ switch twice to activate the „Continuity test“ function. Then connect the measuring contacts to the object to be tested. A measured value of < 150 ohms is recognised as continuity; this is confirmed by an audible signal. If „O.L.“ appears on the display instead of a measured value, either the measuring range has been exceeded or the measuring circuit is not closed or has been interrupted.



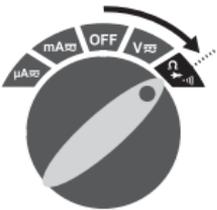
MultiMeter-Pocket

6 Diode test

To test the diode, turn the rotary switch to position „ Ω ” and press the „Mode” switch once to activate the „Diode test” function. Then connect the measuring contacts to the diode. The measured value acquired appears on the display. If „O.L.” appears on the display instead of a measured value, the diode has either been tested in the reverse direction or is faulty.



Forward direction



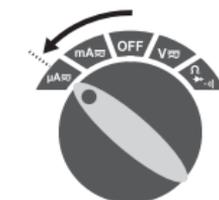
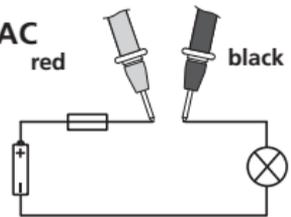
Reverse direction



Forward direction

7 Current measurement DC/AC

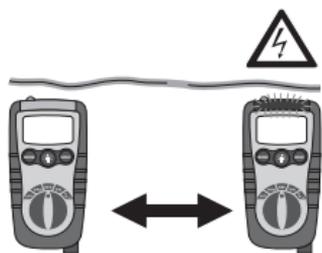
To take a current measurement in the range from 0 to 200 mA, turn the rotary switch to position „mA” and press the „Mode” button to set the voltage mode (AC, DC). To take a current measurement in the range from 0 to 200 μ A, turn the rotary switch to position „ μ A” and press the „Mode” button to set the voltage mode (AC, DC). Disconnect the circuit before connecting the meter. Then connect the measuring contacts to the object to be tested. The measured value acquired and the polarity appear on the display. Disconnect the circuit again before disconnecting the meter.



No currents above 200 mA may be measured in the μ A/mA range! Currents above this level trigger the automatic fuse in the meter.

8 Voltage detection, non-contact (AC warning)

The non-contact voltage detector integrated in the meter is able to detect AC voltages from 100 V to 600 V. Even when the device is switched off, live cables or cable breaks still have to be reckoned with. Run the voltage sensor along the object to be tested (5 - 10 mm). The display lights up if AC voltage is detected.



Non-contact voltage detection is no substitute for conventional voltage testing. As the device detects an electrical field, it will react even to static charge.

Voltage detection, single-pole phase test

Connect the red test prod to the phase or neutral conductor. The red LED only lights up if the phase conductor is live. This function also works if the device is switched off. When the single-pole phase test is carried out on the outer conductor, the indicator function may be adversely affected under certain conditions (e.g. when insulating personnel protective equipment is used or at insulated locations).



The single-pole phase test is not suitable for checking for zero voltage. To do this, you need to carry out a two-pole phase test.

9 Flashlight function

To switch on the flashlight, press and hold down the corresponding button. The light switches itself off automatically as soon as the button is released.

10 Automatic fuse

The meter is equipped with an electronic auto-reset fuse in all ranges and can intercept switching errors under normal operating conditions. If the electronic fuse trips, de-energise the electrical circuit and disconnect the meter. Rectify the switching error. The device will resume normal operation when restarted.

11 Calibration

The meter needs to be calibrated and tested on a regular basis to ensure it produces accurate measurement results. We recommend carrying out calibration once a year.

MultiMeter-Pocket

Technical data

Function	Range	Precision
DC voltage	200 mV	$\pm (0.5\% \text{ rdg} + 3 \text{ digits})$
	2.000 V, 20.00 V, 200.0 V 600 V	$\pm (1.2\% \text{ rdg} + 3 \text{ digits})$
AC voltage 40 - 400 Hz	2.000 V, 20.00 V	$\pm (1.0\% \text{ rdg} + 8 \text{ digits})$
	200.0 V, 600 V	$\pm (2.3\% \text{ rdg} + 10 \text{ digits})$
DC current	200.0 μ A, 2000 μ A	$\pm (2.0\% \text{ rdg} + 8 \text{ digits})$
	20.00 mA, 200.0 mA	
AC current	200.0 μ A, 2000 μ A	$\pm (2.5\% \text{ rdg} + 10 \text{ digits})$
	20.00 mA, 200.0 mA	
Resistance	200.0 Ω	$\pm (0.8\% \text{ rdg} + 5 \text{ digits})$
	2.000 k Ω , 20.00 k Ω , 200.0 k Ω	$\pm (1.2\% \text{ rdg} + 5 \text{ digits})$
	2.000 M Ω	$\pm (5.0\% \text{ rdg} + 5 \text{ digits})$
	20.00 M Ω	$\pm (10.0\% \text{ rdg} + 5 \text{ digits})$
Max. input voltage	600 V AC/DC	
Diode test	Test current 1 mA max., open circuit voltage of 1.5 V typical	
Continuity test	Audible signal if the resistance is $< 150 \Omega$	
Input resistance	$> 7.5 \text{ M}\Omega$ (V DC, V AC)	
Polarity	Sign for negative polarity	
LCD	Up to 1999 (3.5 segments)	
Fuse	mA, μ A range: 0.2 A/500 V	
Overvoltage	CAT III - 1000 V	
Pollution degree	2	
Degree of protection	IP 64	
Max. rel. humidity	80% non-condensing	
Operating temperature	-10°C to 55°C	
Power supply	2 x 1.5 V AAA (NEDA24A/IEC LR 03)	
Dimensions	120 x 55 x 40 mm	
Weight	145 g	
Test standards	EN 61326, EN 61010-1, EN 61010-2-031	

Subject to technical alterations. 06.2010

EU directives and disposal

This device complies with all necessary standards for the free movement of goods within the EU.

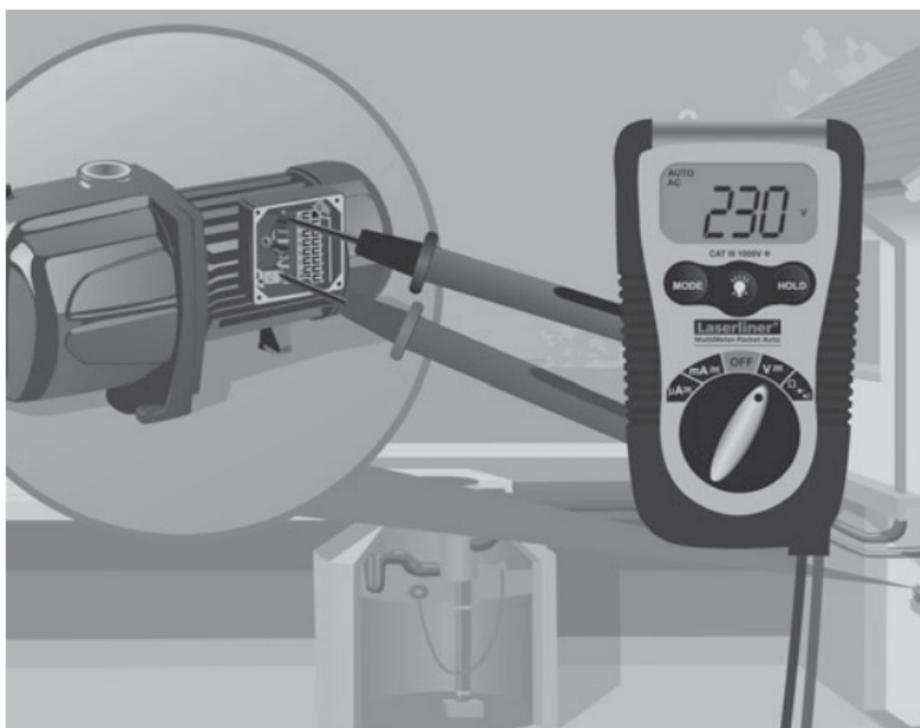
This product is an electric device and must be collected separately for disposal according to the European Directive on waste electrical and electronic equipment.

Further safety and supplementary notices at:

www.laserliner.com/info



MultiMeter-Pocket



SERVICE



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083.032A / Rev.0610

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