DC CURRENT MEASUREMENT

1. Red lead to " V Ω mA". Black lead to "COM". (For measurements between 200mA and 10A connect red lead to " 10A" jack with fully depressed .)
2. RANGE switch to desired DCA position.
3. Open the circuit to be measured, and connect test leads IN SERIES with the load in which current is to be measured.
4. Read current value on Digital Display .

RESISTANCE MEASUREMENT

1. Red lead to "V Ω mA ". black lead to "COM".
2. RANGE switch to desired Ω Position.
3. If the resistance being measured is connected to a circuit , turn off power and discharge all capacitors before measurement.
4. Connect test leads to circuit being measured.
5. Read resistance value on Digital Display.

DIODE MEASUREMENT

1. Red lead to "V Ω mA". Black lead to "COM"
2. RANGE switch to ⊣⊢ position.
3. Connect the red test lead to the anode of the diode to be measured and black test lead to cathode.
4. The forward voltage drop in mV will be displayed. If the diode is reversed, figure "1" will be shown.

TRANSISTOR hFE MEASUREMENT

1. RANGE switch to the hFE position.
2. Determine whether the transistor is NPN or PNP type and locate the Emitter, Base and Collecter leads. Insert the leads into the proper holes of the hFE Socket on the front panel.
3. The meter will display the approximate hFE.value at the condition of base current 10μA and VCD 2.8V .

BATTERY AND FUSE REPLACEMENT

Fuse rarely need replacement and blow almost always as a result of operator error.

If " ⊟ " appers on display , it indicates that the battery should be replaced.

To replace battery & Fuse (500mA/ 250V) remove two screws in the bottom of the case . Simply remove the old , and replace with a new one . Be careful to observe polarity .

CAUTION

Before attempting to open the case of the instrument, be sure to disconnect test leads from any energized circuits to avoid shock hazard .

ACCESSORIES

- Operator's instruction manual
- Set of test leads
- Gift box
- 9 volt battery , NEDA 1604 6F22 TYPE (Optional) .

OPERATOR'S INSTRUCTION MANUAL

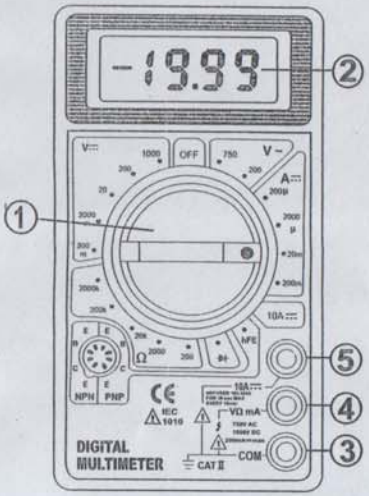
MINI DIGITAL MULTIMETER

CE

⚠ WARNING

READ AND UNDERSTAND THIS MANUAL BEFORE USING THE INSTRUMENT

Failure to understand and comply with the WARNINGS and operating instructions can result in serious or fatal injuries and/ or property damage.



GENERAL

This instrument is one of the series of compact pocket – sized $3\frac{1}{2}$ digit multimeters for measuring DC and ac voltage , DC current , resistance and diode . Some of those also provide temperature , transistor measurement and audible continuity test function or can be used as a signal generator (see table) . Full range overload protection and low battery voltage indication are Provided. they are ideal instruments for use in fields , such as laboratory , workshop, hobby and home applications.

FRONT PANEL DESCRIPTION

1 . FUNCTION AND RANGE SWITCH

This swich is used to select the function and desired range as well as to turn on the instrument .

To extend the life of this battery , the switch should be in the "OFF" position when the instrument is not in use.

2 . DISPLAY

$3\frac{1}{2}$ digit , 7 segment , 0 . 5" high LCD.

3 . "Common" JACK

Plug in connector for black (negative) test lead .

4. "V Ω mA" JACK

Plug in connector for red (Positive) test lead for all voltage and resistance and current(except 10A) measurements.

5. "10A" JACK

Plug in connector for red (positive) test lead for 10A measurement.

SPECIFICATIONS

Accuracies are guranteed for 1 year, 23°C ± 5°C , less than 75% RH.

DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200mV	100μV	± 0. 5 % of rdg± 1D
2000mV	1mV	± 0. 5 % of rdg± 3D
20V	10mV	± 0. 5 % of rdg± 3D
200V	100mV	± 0. 5 % of rdg± 3D
1000V	1V	± 0. 5 % of rdg± 3D

OVERLOAD PROTECTION: 220VAC for 200mV range and 1000V DC or 750V AC for other ranges.

AC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200V	100mV	± 1 .2 %of rdg ±10D
750V	1V	± 1 .2 % of rdg ±10D

OVERLOAD PROTECTION: 1000V DC or 750V AC for all ranges.

FREQUENCY RANGE:45Hz – 450Hz

DC CURRENT

RANGE	RESOLUTION	ACCURACY
200μA	100mA	± 1% of rdg± 2D
2000μA	1μA	± 1% of rdg± 2D
20mA	10μA	± 1% of rdg ± 2D
200mA	100μA	± 1.2% of rdg ± 5D
10A	10mA	± 2% of rdg ± 2D

OVERLOAD PROTECTION: 200mA 250V fuse (10A range unfused).

MEASURING VOLTAGE DROP : 200mV.

RESISTANCE

RANGE	RESOLUTION	ACCURACY
200 ohm	100m ohm	± 1.0% of rdg ± 8D
2000 ohm	1 ohm	± 1.2 % of rdg ± 8D
20k ohm	10 ohm	± 1.2 % of rdg ± 8D
200k ohm	100 ohm	± 1.2 % of rdg ± 8D
2000k ohm	1k ohm	± 1.2 % of rdg ± 8D

MAXIMUM OPEN CIRCUIT VOLTAGE : 2.8V.

OVERLOAD PROTECTION : 15 seconds maximum 220Vrms on all ranges.

OPERATING INSTRUCTIONS

WARNING

1 . To avoid electrical shock hazard and / or damage of the instrument , do not measure voltages that might exceed DC 1000V or AC 750V above earth ground.

2. Before the use of instrument, inspect test leads, connectors and probes for cracks , breaks , or crazes in the insulation.

DC VOLTAGE MEASUREMENT

1. connect red test lead to "V Ω mA" jack . Black lead to "COM" jack.
2. Set RANGE switch to desired DCV position. If the voltage to be measured is not known beforehand, set switch to the highest range and reduce it untill satisfactory reading is obtained.
3. Connect test leads to device or circuit being measured.
4. Turn on power of the device or circuit being measured , voltage value will appear on Digital Display along with the voltage polarity.

AC VOLTAGE MEASUREMENT

1. Red lead to "V Ω mA". Black lead to "COM".
2. RANGE switch to desired ACV position.
3. Connect test leads to device or circuit being tested.
4. Read voltage value on Digital Display.