PEN TYPE DIGITAL MULTIMETER USERS MANUAL

SAFETY RULES

- The meter is designed and tested in accordance with IEC publication 1010, polution degree II and installation category (overvoltage category) II.
- To ensure that the meter is used safely, follow all safety and operating instructions in this manual. If the meter is not used as described in this manual, the safety features of the meter might be impaired.
- Do not use the meter if the meter or test leads look damaged, or if you suspect that the meter is not operating properly.
- When using the probes, keep your fingers behind the finger guards on the probes.
- Disconnect the live test lead before disconnecting the common test lead.
- Make sure the power is off before cutting, unsoldering, or breaking the circuit. Small amount of current can be dangerous.
- Do not apply more than 500Vdc or 500Vac rms between any terminal and earth ground.
- To avoid electrical shock, use with CAUTION when working above 60Vdc or 25Vac rms. Such voltages pose a shock hazard.
- Never make measurements with the battery cover or bottom case off.
- To avoid electrical shock or damage to the meter, do not exceed the input limits.

GENERAL SPECIFICATIONS

Display:	**3 1/2 digit LCD with a Max. reading of 1999.**
Polarity:	**Automatic negative (-) polarity indication.**
Overrange indication:	**Only mark "1" displayed on the LCD.**
Low battery indication:	**Mark "⊏±" is displayed on the LCD.**
Power:	**Single, standard 9-volt battery (NEDA 1604 or 6F22)**
Dimensions:	**230(L)×40(H)×30(W)(mm)**
Weight:	**Approx. 150g (including battery).**

TECHNICAL SPECIFICATIONS

- Accuracy is specified for a period of one year after calibration and at 18°C~28°C(64°F~82°F) with relative humidity up to 75%.
- Accuracy specifications take the form of: ±([% of Reading]+[number of Least Significant Digits])

DC Voltage

2000mV, 20V, 200V, 500V	**±(0.8%+1)**
Impedance	**1MΩ**
Overload Protection	**500V dc/ac p-p**

AC Voltage

200V, 500V	**±(1.5%+10)**
Impedance	**450KΩ**
Overload Protection	**500V dc/ac p-p**
Frequency Range	**40~200Hz**

Resistance

2000Ω, 20KΩ, 200KΩ, 2000KΩ	**±(1.0%+3)**
Overload Protection	**250V dc/ac p-p**

DC Current

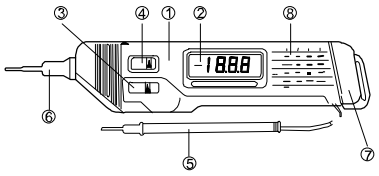
200mA	**±(2.0%+2)**
Overload Protection	**F 200mA/250V fused**

Diode Test

Test current	**1.0±0.6mA**
Test voltage	**3.2V Max.**

FRONT PANEL DESCRIPTION

1) Case
2) 3 1/2 Digit LCD Display
3) Range Switch
4) Function Switch
5) Fixed Test Lead With Probe
6) Fixed Probe & Fuse Cap
7) Battery Compartment Cover
8) Function / Range Table



OPERATING INSTRUCTION

- The mark "⚠" next to the probe is for warning that the input voltage should not exceed the indicated values. This is to prevent damage to the internal circuit.
- The range switch should be set to the range in which you want to make the measurement before operation.

DC Voltage Measurement

Set the Function / Range switch to desired DCV range and connect the test leads across the source or load under measurement. If the voltage range is not known beforehand, set the range switch to the highest range and then turn it down. The polarity of the fixed probe will be indicated along with the voltage.

AC Voltage Measurement

Set the Function / Range switch to desired ACV range and connect the test leads across the source or load under measurement.

DC Current Measurement

Set the Function / Range switch to 200mA range, connect the test leads in series with the load in which the current is to be measured.

Resistance Measurement

Set the Function / Range switch to desired KΩ range, if the resistance to be measured is connected to a circuit, turn off power and discharge all capacitors before applying probes.

> ⚠ **Caution:**
> Maximum input protection: 250V rms, <10 sec.

Diode Test

Set the Function switch to Ω, and the Range switch to 2000Ω Diode range, connect the test leads across the diode: connect the fixed probe to the anode of the diode and the black test lead to the cathode of it.

MAINTENANCE

> ⚠ **Caution:**
> Before attempting battery and fuse removal orreplacement, disconnect the test leads from any energized circuits to avoid shock hazard.

Fuse replacement- With proper use of the meter, the fuse should never need replacement. To replace the fuse, turn the fuse cap counter clockwise and the fuse cap will come off. Take out the blown fuse and replace it with a new F 200mA / 250V fuse.

Battery replacement-When the battery needs replacement, a battery low symbol "⊏±" will be displayed in the lower left side of the LCD. To replace the battery, remove the screw in the battery compartment cover. Replace the exhausted battery with a new one.