UNI-T

UT58A/B/C

Operating Manual

Modern Digital Multimeter

Overview

⚠Warning

To avoid electric shock or personal injury, read the "Safety Information", carefully before using the Meter.

Digital Multimeters Model UT58A, UT58B and UT58C are 2000-count hand-held instruments with remarkable features: ex-large LCD, steady operations, overload protection for all ranges and unique structure. The Meter can measure AC/DC voltage, AC/DC current, resistance, capacitance, temperature, frequency, transistor, diode and continuity, and is equipped with data hold, full icon display and sleep mode functions.

Unpacking Inspection

Open the package case and take out the Meter. Check the following items carefully for any missing or damaged part:

Item	Description	Qty
1	English Operating Manual	1 pc
2	Test Lead	1 pair
3	Multi-Purpose Socket	1 pc
4	Point Contact Temperature Probe (UT58B/UT58C only)	1 pc
5	9V Battery (NEDA 1604, 6F22 or 009P)	1 pc

In the event you find any missing or damaged part, please contact your dealer immediately.

Safety Information

This Meter complies with the standards IEC61010: Pollution Degree2, Overvoltage Category (CAT. II 1000V, CAT. III 600V) and Double Insulation.

CAT. II: Local level, appliance, PORTABLE EQUIPMENT etc., with smaller transient voltage overvoltages than CAT. III

CAT. III: Distribution level, fixed installation, with smaller transient overvoltages than CAT. IV

Use the Meter only as specified in this operating manual, otherwise the protection provided by the Meter may be impaired.

In this manual, a **Warning** identifies conditions and actions that pose hazards to the user, or may damage the Meter or the equipment under test.

A **Note** identifies the information that user should pay attention to.

⚠Warning

To avoid possible electric shock or personal injury, and to avoid possible damage to the Meter or to the equipment under test, adhere to the following rules:

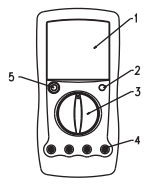
- **Before using the Meter inspect the case. Do not use the Meter if it is damaged or the case (or part of the case) is removed. Look for cracks or missing plastic. Pay attention to the insulation around the connectors.**
- **Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads with identical model number or electrical specifications before using the Meter.**
- **Do not apply more than the rated voltage, as marked on the Meter, between the terminals or between any terminal and grounding.**
- **The rotary switch should be placed in the right position and no any changeover of range shall be made during measurement to prevent damage of the Meter.**
- **When the Meter working at an effective voltage over 60V in DC or 30V rms in AC, special care should be taken for there is danger of electric shock.**
- **Use the proper terminals, function, and range for your measurements.**
- **If the value to be measured is unknown, use the maximum measurement position and reduce the range step by step until a satisfactory reading is obtained.**
- **Do not use or store the Meter in an environment of high temperature,humidity,explosive,inflammable and strong magnetic field. The performance of the Meter may deteriorate after dampened.**
- **When using the test leads, keep your fingers behind the finger guards.**
- **Disconnect circuit power and discharge all high -voltage capacitors before testing resistance, continuity, diodes, capacitance or current.**
- **Before measuring current, check the Meter's fuses and turn off power to the circuit before connecting the Meter to the circuit.**
- **Replace the battery as soon as the battery indicator appears. With a low battery, the Meter might produce false readings that can lead to electric shock and personal injury.**
- **Remove test leads, test clips and temperature probe from the Meter and turn the Meter power off before opening the Meter case.**
- **When servicing the Meter, use the replacement parts with the same model or identical electrical specifications.**
- **To avoid any damage to the meter or any accident, do not alter the internal circuit of the Meter randomly.**
- **Soft cloth and mild detergent should be used to clean the surface of the Meter when servicing. No abrasive and solvent should be used to prevent the surface of the Meter from corrosion, damage and accident.**
- **The Meter is suitable for indoor use.**
- **Turn the Meter power off when it is not in use and take out the battery when not using for a long time.**
- **Constantly check the battery as it may leak when it has been using for some time, replace the battery as soon as leaking appears. A leaking battery will damage the Meter.**

International Electrical Symbols

~	AC (Alternating Current).
⎓	DC (Direct Current).
⏚	Grounding.
⧈	Double Insulated.
	Low Battery Indication.
⚠	Warning. Refer to the Operating Manual.
CE	Conforms to Standards of European Union.

The Meter Structure (See Figure 1)

1. **LCD** Display.
2. **HOLD** Button.
3. Rotary Switch.
4. Input Terminals.
5. **POWER**



(Figure 1)

Rotary Switch

Below table indicated for information about the rotary switch positions.

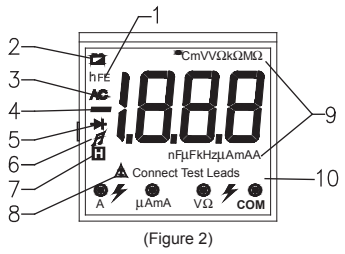
Rotary Switch Position	Function
V⎓	DC voltage measurement.
V~	AC voltage measurement.
⊣⊢	Capacitance Test
Ω	Resistance measurement.
⊣◁⊢	Diode test.
)))	Continuity test.
Hz	Frequency Test
A~	AC Current Measurement
A⎓	DC Current Measurement
°C	Temperature
hFE	Transistor Test

Functional Buttons

Below table indicated for information about the functional button operations.

Button	Description
POWER (Yellow Button)	Turn the Meter on and off. ● Press down the POWER to turn on the Meter. ● Press up the POWER to turn off the Meter.
HOLD (Blue Button)	● Press HOLD once to enter hold mode. ● Press HOLD again to exit hold mode. ● In Hold mode, H is displayed and the present value is shown.

Display Symbols (See Figure 2)

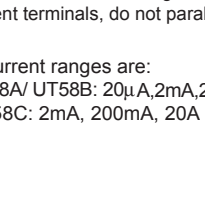


(Figure 2)

No.	Symbol	Description
1	hFE	The unit of transistor test
2		The battery is low. ⚠Warning: To avoid false readings, replace the battery as soon as the battery indicator appears.
3	AC	Indicator for AC voltage or current. The displayed value is the mean value.
4	−	Indicates negative reading.
5	⊣◁⊢	Test of diode.
6	)))	The continuity buzzer is on.
7	H	Date hold is active.
8	⚠ Connect Terminal Ω,kΩ,MΩ	Indicator of connecting test leads into different input terminals. Ω: Ohm. The unit of resistance. kΩ: kilohm.1 x 10^3 or 1000 ohms. MΩ: Megaohm. 1 x 10^6 or 1,000,000 ohms.
9	mV, V	V: Volts. The unit of voltage. mV: Millivolt. 1 x 10^{-3} or 0.001 volts.
	μF nF	F: Farad.The unit of capacitance. μF: Microfarad. 1 x 10^{-6} or 0.000001 farads. nF: Nanofarad. 1 x 10^{-9} or 0.000000001 farads.
	μA, mA, A	A: Amperes (amps). The unit of current. mA: Milliamp. 1 x 10^{-3} or 0.001 amperes. μA Microamp. 1x 10^{-6} or 0.000001 amperes.
	°C	Centigrade temperature
	kHz	The unit of frequency in cycles/ second. Kilohertz. 1 x 10^3 or 1,000 hertz.

Measurement Operation

A. Measuring DC and AC Voltage (See Figure 3)



(Figure 3)

⚠Warning

To avoid harms to you or damages to the Meter from electric shock, please do not attempt to measure voltages higher than 1000V although readings may be obtained.

The DC Voltage ranges are: 200mV, 2V, 20V, 200V and 1000V.

The AC Voltage ranges are: 2V, 20V, 200V and 750V

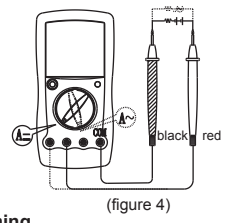
To measure DC or AC Voltage, connect the Meter as follows:

1. Insert the red test lead into the **HzVΩ**⊣◁⊢(UT58C) or **V**Ω⊣◁⊢(UT58A/UT58B) terminal and the black test lead into the COM input terminal.
2. Set the rotary switch to an appropriate measurement position in V~or V⎓range.
3. Connect the test leads across with the object to be measured.
   The measured value shows on the display.

Note

- If the value of voltage to be measured is unknown, use the maximum measurement position (1000V) and reduce the range step by step until a satisfactory reading is obtained.
- The LCD displays "1" indicating the existing selected range is overloaded, it is required to select a higher range in order to obtain a correct reading.
- In each range, the Meter has an input impedance of approx. 10MΩ. This loading effect can cause measurement errors in high impedance circuits. If the circuit impedance is less than or equal to 10kΩ, the error is negligible (0.1% or less).
- When DC voltage measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

B. Measuring DC and AC Current (See Figure 4)



(figure 4)

⚠Warning

Never attempt an in-circuit current measurement where the open circuit voltage between terminals and ground is greater than 250V .

If the fuse burns out during measurement, the Meter may be damaged or the operator himself may be hurt.

Use proper terminals, function, and range for the measurement. When the testing leads are connected to the current terminals, do not parallel them across any circuit.

The DC Current ranges are:

Model UT58A/ UT58B: 20μA,2mA,20mA,200mA and 20A.

Model UT58C: 2mA, 200mA, 20A

The AC Current ranges are: 2mA, 200mA and 20A

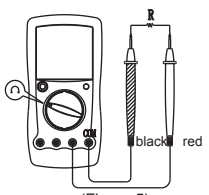
To measure current, do the following:

1. Turn off power to the circuit. Discharge all high-voltage capacitors.
2. Insert the red test lead into the A or μ**AmA** (UT58A) or mA (UT58B/UT58C) terminal and the black test lead into the COM terminal.
3. Set the rotary switch to an appropriate measurement position in A⎓or A~ range.
4. Break the current path to be tested. Connect the red test lead to the more positive side of the break and the black test lead to the more negative side of the break.
5. Turn on power to the circuit.
   The measured value shows on the display.

Note

- If the value of current to be measured is unknown, use the maximum measurement position, and reduce the range step by step until a satisfactory reading is obtained
- For safety sake, the measuring time for high current (>10A) should be less than 10 seconds and the interval time between 2 measurements should be greater than 15 minutes
- When current measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

C.Measuring Resistance (See Figure 5)



(Figure 5)

⚠Warning

To avoid damages to the Meter or to the devices under test, disconnect circuit power and discharge all the high-voltage capacitors before measuring resistance.

The resistance ranges are:

Model UT 58A/UT58B:200Ω,2kΩ ,20kΩ,2M Ω,20MΩ and 200MΩ.

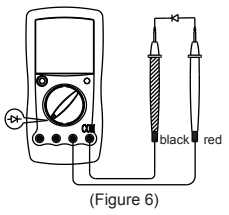
Model UT 58C:200Ω, 2kΩ, 20kΩ, 2MΩ and 20MΩ.

1. Insert the red test lead into the Hz **V**Ω⊣◁⊢(UT58C) or **V**Ω⊣◁⊢(UT58A/UT58B) terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to an appropriate measurement position in Ω range.
3. Connect the test leads across with the object being measured.
   The measured value shows on the display.

Note

- The test leads can add 0.1to 0.2Ω of error to the slow-resistance measurement. To obtain accurate readings in low-resistance, short-circuit the input terminals beforehand and record the reading obtained (called this reading as X). (X) is the additional resistance from the test lead. Then use the equation: measured resistance value (Y) – (X)=accurate readings of resistance.
- If the input terminal short-circuit reading ⩾0.5,check the test leads for any looseness or other cause.
- For high resistance (>1MΩ), it is normal taking several seconds to obtain a stable reading; select short test leads for stable and precise readings.
- When the resistance is higher than the maximum range or in open circuit condition, the Meter displays **"1"**.
- When resistance measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

D. Measuring Diodes (See Figure 6)



(Figure 6)

⚠Warning

To avoid damage to the Meter or to the equipment under test, disconnect circuit power and discharge all high-voltage capacitors before measuring diodes.

To avoid harms to you, please do not attempt to input voltages higher than 60V DC or 30V rms AC.

Use the diode test to check diodes, transistors, and other semiconductor devices. The diode test sends a current through the semiconductor junction, and then measures the voltage drop across the junction. A good silicon junction drops between 0.5V and 0.8V

To test out a diode out of a circuit, connect the Meter as follows:

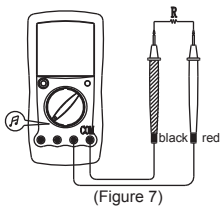
1. Insert the red test lead into the Hz **V**Ω⊣◁⊢(UT58C) or **V**Ω⊣◁⊢(UT58A/UT58B) terminal and the black test lead into the COM terminal
2. Set the rotary switch to ⊣◁⊢))).
3. For forward voltage drop readings on any semiconductor component, place the red test lead on the component's

anode and place the black test lead on the component's cathode.
The measured value shows on the display.

Note

- In a circuit, a good diode should still produce a forward voltage drop reading of 0.5V to 0.8V; however; the reverse voltage drop reading can vary depending on the resistance of other pathways between the probe tips.
- Connect the test leads to the proper terminals as said above to avoid error display. The LCD will display "1" ndicating open-circuit for wrong connection. The unit of diode is Volt (V), displaying the positive-connection voltage-drop value.
- The open-circuit voltage is around 3V.
- When diode testing has been completed, disconnect the connection between the testing leads and the circuit under test.

E.Testing for Continuity (See Figure 7)



(Figure 7)

⚠Warning

To avoid harms to you, please do not attempt to input voltages higher than 60V DC or 30V rms AC.
To avoid damages to the Meter or to the devices under test, disconnect circuit power and discharge all the high-voltage capacitors before testing for continuity.

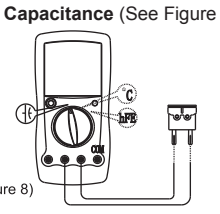
To test for continuity, connect the Meter as below:

1. Insert the red test lead into Hz **VΩ⊣⊢** (UT58C) or **VΩ⊣⊢** (UT58A/UT58B) terminal and the black test lead into the COM terminal.
2. Set the rotary switch to ⊣⊢ .
3. Connect the test leads across with the object being measured.
4. The buzzer does not sound if the resistance of a circuit under test is >70Ω
   The buzzer sounds continuously if the circuit is in good condition with resistance value ≤10Ω.
   The measured value shows on the display and the unit is Ω.

Note

- The open-circuit voltage is around 3V
- When continuity testing has been completed, disconnect the connection between the testing leads and the circuit under test.

F. Measuring Capacitance (See Figure 8)


(Figure 8)

⚠Warning

To avoid damage to the Meter or to the equipment under test, disconnect circuit power and discharge all high-voltage capacitors before measuring capacitance Use the DC voltage function to confirm that the capacitor is discharged.
To avoid harms to you, please do not attempt to input voltages higher than 60V DC or 30V rms AC.

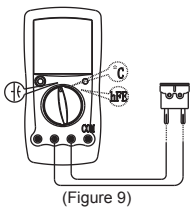
Capacitance measurement has 3 measurement positions on the rotary switch : 2nF, 200nF and 100μF.
To measure capacitance, connect the Meter as follows:

1. Insert the multi-purpose socket into the Hz VΩ⊣⊢ (UT58C) or **VΩ⊣⊢** (UT58A/UT58B) and μ**AmA** (UT58A) or mA (UT58B/UT58C) terminal.
2. Set the rotary switch to an appropriate measurement position in⊣⊢F range.
3. Insert the capacitor to be tested into the corresponding jack of the multi-purpose socket.
   The measured value shows on the display.

Note

- When the tested capacitor is shorted or the capacitor value is overloaded, the LCD display "**1**".
- To minimize the measurement error caused by the distributed capacitor, the testing lead should be as short as possible.
- It is normal to take a longer time when testing a>10μF high capacitor value.
- When capacitance testing has been completed, remove the multi-purpose socket from the input terminal.

G. Measuring Temperature (UT58B/UT58C only)
(See Figure 9)


(Figure 9)

⚠Warning

To avoid harm to you or damages to the Meter, do not attempt to input voltages higher than 60V in DC or 30V rms in AC although readings may be obtained.
During testing, the operating temperature must be within 18-23℃ otherwise the obtained reading may not be correct especially for measuring low temperature.
The temperature measurement range is from -40℃~1000℃
To measure temperature, connect the Meter as follows:

1. Insert the multi-purpose socket into the Hz**VΩ⊣⊢**(UT58C) or **VΩ⊣⊢** (UT58B) and mA terminal.
2. Set the rotary switch to ℃. The LCD will display "1" at this moment.
3. Insert the temperature probe into the corresponding jack of the multi-purpose socket. The LCD displays the room temperature at this moment.
4. Place the temperature probe's tip to the object being measured.
   The measured value of the object being measured shows on the display after few seconds.

Note

- When temperature measeuremnet has been complete remove the temperature probe from the multi-purpose socket and remove the multi-purpose socket from the Meter.

H. Measuring Transistor (See Figure 8)

⚠Warning

To avoid harms to you, please do not attempt to input voltages higher than 60V DC or 30V rms AC.

To measure transistor, connect the Meter as follows:

1. Insert the multi-purpose socket into the Hz **VΩ⊣⊢** (UT58C) or **VΩ⊣⊢** (UT58A/UT58B) and μ**AmA** (UT58A) or mA (UT58B/UT58C) terminal.
2. Set the rotary switch to hFE.
3. Insert the NPN or PNP type transistor to be tested into the corresponding jack of the multi-purpose socket
4. The measured nearest transistor value shows on the display.

Note

- When transistor measeurement has been completed, remove the multi-purpose socket from the input terminal.

I. Measuring Frequency (UT58C Only)
(See Figure 9)

⚠Warning

To avoid harm to you , do not attempt to input the tested frequency voltages higher than 30V rms.

The frequency measurement ranges are 2kHz and 20kHz
To measure frequency, connect the Meter as follows:

1. Insert the red test lead into the Hz **VΩ⊣⊢** terminal and the black test lead into the COM terminal.
2. Set the rotary switch to an appropriate measurement position in Hz range.
3. Parallel connect the test leads across with the object being measured.
   The measured value shows on the display.

Note

- The testing condition is as follows:
  50mV rms < input amplitude < 30V rms.
- When Hz measurement has been completed, disconnect the connection between the testing leads and the circuit under test.

Sleep Mode

To preserve battery life, the Meter automatically turns off if you do not turn the rotary switch or press any button for around 15 minutes.
To activate the Meter, press POWER for two times.

Operation of Hold Mode

⚠Warning

To avoid possibility of electric shock, do not use Hold mode to determine if circuits are without power. The Hold mode will not capture unstable or noisy readings

To use the Hold mode as follows:

- Press HOLD to enter Hold mode.
- Press HOLD again to exit Hold mode.
- In Hold mode, H is displayed.

General Specifications

Maximum Voltage or Current between input Terminals and Grounding: According to different functional input protection value.

- Fused Protection for uA mA Input Terminals: CE Version: 0.5A, 250V fast type, ϕ5x20mm.
- Maximum Display : 1999,updates 2~3 times/ second.
- Range : Manual ranging.
- Polarity display : Automatically
- Overloading : Display "**1**".
- Low Battery Indication : Display " ".
- Temperature: Operating: 0℃~40℃ (32℉~104℉); Storage : -10℃~50℃(14℉~122℉)
- Relative Humidity : ≤ 75%@0℃~30℃; ≤ 50%@30℃~40℃
- Electromagnetic Compatibility : In a radio field of 1 V/m, Overall Accuracy = Specified Accuracy + 5% of Range; in a radio field of more than 1 V/m, no assigned accuracy is specified.
- Battery Type : One piece of 9V (NEDA1604 or 6F22 or 006P).
- Dimensions : 179x88x39mm.
- Weight : Approx.380g (including holster and battery)
- Safety/Compliances : IEC61010 CAT II 1000V, CATIII 600V overvoltage and double insulation standard.
- Certificate: CE

Accuracy Specifications

Accuracy:±(a% reading + b digits),guarantee for 1 year.
Operating temperature:18℃~28℃.
Relative humidity: ≤ 75%RH.

A. DC Voltage

Range	Resolution	Accuracy	Overload Protection
200mV	0.1mV	±(0.5%+1)	250VAC
2V	1mV		1000V AC
20V	10mV		
200V	100mV		
1000V	1V	±(0.8%+2)	

Remarks:Input Impedance: approx.10MΩ.

B. AC Voltage

Range	Resolution	Accuracy	Overload Protection
2V	1mV	±(0.8%+3)	1000V AC
20V	10mV		
200V	100mV		
750V	1V	±(1.2%+3)	

Remarks:

- Input Impedance: approx.10MΩ.
- Frequency response:
  40Hz~1kHz< 500V;
  40Hz~400Hz > 500V
  The ⩾ 500Hz reading is for reference
- Display sinewave RMS value(AVG response)

C. DC Current

Model	Range	Resolution	Accuracy	Overload Protection
UT58A	20μA	0.01μA	±(0.8%+1)	Fuse 0.5A, 250V, fast type, ϕ5x20mm
UT58ABC	2mA	1μA		
UT58AB	20mA	10μA		
UT58ABC	200mA	0.1mA	±(1.5%+1)	
UT58ABC	20A	10mA	±(2%+5)	Un-Fused

Remarks:

- At 20A Range:
  For continuous measurement ≤10 seconds and interval time between 2 measurement greater than 15 minutes.

D. AC Current

Range	Resolution	Accuracy	Overload Protection
2mA	1μA	±(1.0%+3)	Fuse 0.5A, 250V, fast type, ϕ5x20mm
200mA	0.1mA	±(1.8%+3)	
20A	10mA	±(3.0%+5)	Un-Fused

Remarks:

- Frequency reaponse: 40Hz~400Hz
- At 20A Range:
  For continuous measurement ≤ 10 seconds and interval time between 2 measurement greater than 15 minutes

E. Resistance

Model	Range	Resolution	Accuracy	Overload Protection
UT58ABC	200Ω	0.1Ω	±(0.8%+3) + Test Lead Short Circuit Resistance	250V AC
UT58ABC	2kΩ	1Ω	±(0.8%+1)	
UT58ABC	20kΩ	10Ω		
UT58ABC	2MΩ	1kΩ		
UT58ABC	20MΩ	10kΩ	±(1.0%+2)	
UT58AB	200MΩ	100kΩ	±[5%(reading-10)+10]	

F. Diodes

Range	Resolution	Overload Protection
⊣⊢	1mV	250V AC

Remarks:

- A good silicon junction drops between 0.5V~0.8V
- Open circuit voltage approx.3V

G. Continuity

Range	Resolution	Remarks
1Ω		• Open circuit voltage approx.3V • The buzzer does not sound if the resistance of a circuit under test is >70Ω • The buzzer sounds continuously if the circuit is in good condition with resistance value≤10Ω

H. Capacitance

Range	Resolution	Accuracy
2nF	1pF	±(4.0%+3)
200nF	0.1nF	
100μF	0.1μF	±(5.0%+4) When it is⩾40μF: the obtained reading is only for reference

Remarks:

- **Testing frequency: approx. 400Hz.**
- **Overload protection: CE Version: Fuse ϕ5x20mm F 0.5A 250V**

I. Temperature (UT58B/UT58C only)

Range	Resolution	Accuracy
℃	1℃	-40~0℃ ±(3%+7)
		0~400℃ ±(1%+3)
		400~1000℃ ±2.5%

Remarks:

- **Overload protection: CE Version: Fuse ϕ 5x20mm, 0.5A 250V**
- **Temperature Probe: Suitable for K type (nickel chrome ~ nickel silicon) thermocouple, the accessory is a point contact K type (nickel chrome ~ nickel silicon) thermocouple and suitable for testing temperature lower than 230℃.**

J. Transistor

Range	Resolution	Accuracy±(a% reading + b digits)
hFE	1β	Vce≈3V Ibo≈10μA 1000βMAX

Remarks

- **Overload protection: CE Version: Fuseϕ5x20mm, 0.5A 250V**

K. Frequency (UT58C only)

Range	Resolution	Accuracy	Overload Protection
2kHz	1Hz	±(1.5%+5)	250V AC
20kHz	10Hz		

Remarks

- 100mVrms ≤ input amplitude ≤ 30Vrms

Maintenance

This section provides basic maintenance information including battery and fuse replacement instruction.

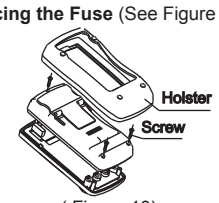
⚠Warning

Do not attempt to repair or service your Meter unless you are qualified to do so and have the relevant calibration, performance test, and service information. To avoid electrical shock or damage to the Meter, do not get water inside the case.

A. General Service

- Periodically wipe the case with damp cloth and mild detergent. Do not use chemical solvent.
- To clean the terminals with cotton bar with detergent, as dirt or moisture in the terminals can affect readings.
- Turn the Meter off when it is not in use and take out the battery when not using for a long time.
- Do not store the Meter in place of humidity, high temperature, explosive, inflammable and strong magnetic field

B. Replacing the Fuse (See Figure 10)



(Figure 10)

⚠Warning

To avoid electrical shock or arc blast, or personal injury or damage to the Meter, use specified fuses ONLY in accordance with the following procedure.

To replace the Meter's fuse:

1. Turn the Meter off and remove all connections from the terminals.
2. Remove the holster from the Meter.
3. Remove the 3 screws from the case bottom, and separate the case top from the case bottom.
4. Remove the fuse by gently prying one end loose, then take out the fuse from its bracket.
5. Install ONLY replacement fuses with the identical type and specification and make sure the fuse is fixed firmly in the bracket.
   Fuse: 0.5A, 250V, fast type,ϕ5x20mm
6. Rejoin the case bottom and case top, and reinstall the 3 screws and holster.
   Replacement of the fuses is seldom required. Burning of a fuse always results from improper operation.

C.Replacing the Battery (See Figure 10)

⚠Warning

To avoid false readings, which could lead to possible electric shock or personal injury, replace the battery as soon as the battery indicator " " appears.

To replace the Meter's battery:

1. Turn the Meter power off and remove all connections from the terminals.
2. Remove the holster from the Meter.
3. Remove the 3 screws from the case bottom, and separate the case top from the case bottom.
4. Remove the battery from the battery connector.
5. Replace with a new 9V battery (NEDA1604, 6F22 or 006P).
6. Rejoin the case bottom and case top, and reinstall the 3 screws and the holster.

** END **

This operating manual is subject to change without notice.

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