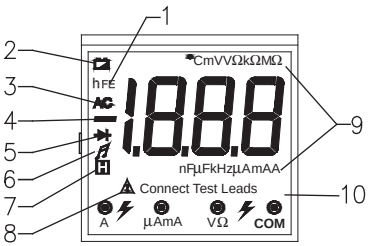
Functional Buttons

Below table indicated for information about the functional button operations.

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

Display Symbols(1) (see figure 2)



(figure 2)

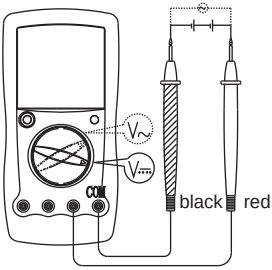
No.	Symbol	Meaning
1	**hFE**	The Unit of Transistor Test
2		The battery is low. ⚠Warning: To avoid false readings, replace the battery as soon as the battery indicator appears.
3	**AC**	Indicator for AC voltage or current. The displayed value is the mean value.
4		Indicates negative reading.
5		Test of diode.
6		The continuity buzzer is on.
7	**H**	Date hold is active.
8	**Connect Terminal**	Indicator of connecting test leads into different input terminals.

Display Symbols(2) (see figure 2)

No.	Symbol	Meaning
9	**Ω,kΩ,MΩ**	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.
	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(1)

A.DC and AC Voltage Measurement (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:

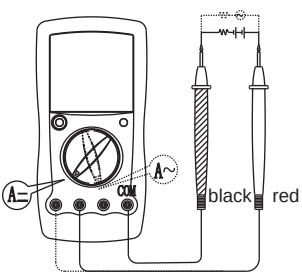
1. Insert the red test lead into the **HzVΩ⊣⊢**(UT58C) or **VΩ⊣⊢** (UT58A/UT58B) terminal and the black test lead into the COM input terminal.
2. Set the rotary switch to an appropriate measurement position in V~ or V⎓ range.
3. Connect the test leads across with the object to be measured.
   The measured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

Measurement Operation(2)

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.DC and AC Current Measurement (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.

Measurement Operation(3)

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:

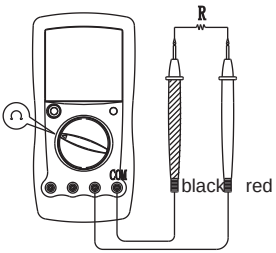
1. Turn off power to the circuit. Discharge all high-voltage capacitors.
2. Insert the red test lead into the A or μ**AmA** (UT58A) or mA (UT58B/UT58C) terminal and the black test lead into the COM terminal.
3. Set the rotary switch to an appropriate measurement position in A⎓ or A~ range.
4. Break the 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.

Measurement Operation(4)

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

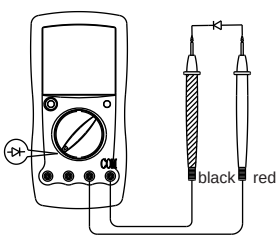
1. Insert the red test lead into the Hz **VΩ⊣⊢**(UT58C) or **VΩ⊣⊢**(UT58A/UT58B) terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to an appropriate measurement position in Ω range.
3. Connect the test leads across with the object being measured.
   The measured value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

Measurement Operation(5)

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)

Measurement Operation(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 **VΩ⊣⊢**(UT58C) or **VΩ⊣⊢**(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.

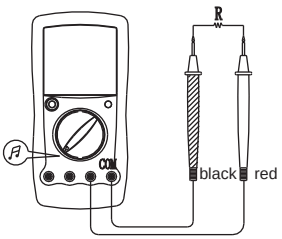
Note

- 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" indicating open-circuit for wrong connection. The unit of diode is Volt (V), displaying the positive-connection voltage-drop value.

Measurement Operation(7)

- 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:

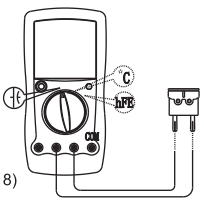
1. Insert the red test lead into Hz **VΩ**⊣⊢ (UT58C) or **V**Ω⊣⊢(UT58A/UT58B) terminal and the black test lead into the COM terminal.
2. Set the rotary switch to ⊣⊢ .
3. Connect the test leads across with the object being measured.
4. The buzzer does not sound if the resistance of a circuit under test 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.

Measurement Operation(8)

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. Capacitance Measurement (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.