Section One

Introduction

⚠ Warning

Read "Safety Information" before you use the Meter.

Generalization

The meter is a handled, battery-operated tool for measuring electrical parameters. It has all the features of a digital millimeter and measures AC /DC voltage, AC/DC current, resistance, capacitance, dBm, TC, RTD, Diode Test, and Continuity Check, frequency/duty cycle ratio. Besides, it has the following features:

- Select either manual range or auto-range functions.
- Display hold DIS_HOLD ） and auto hold （AUTO_HOLD） functions.
- Peak measurement function, 1ms peak value and capture spike pulse.
- Choose 1 ～ 2400Ω reference impedance in decibels measurement.
- AC + DC measurement(AC +DC).
- Relative value measurement（REL_%）.
- Maximum value , minimum value and average value measurement（MAX/MIN/AVG）.
- Display speed rate: 2.5～3 times/second, analog refreshing rate: 20～24 times /second.
- AC voltage, current measurement True RMS response, measurement's bandwidth: 20Hz ～ 1kHz.
- TC measurement: K division, built-in temperature transmitter, automatic compensation for reference-junction, display ℃ or ℉.
- Sounds if continuity measurement value is lower than 30Ω.
- Large LCD screen could display multiple data and other related measurement information simultaneously.
- Two types of memory data functions: saved readings and logged readings, convenient for viewing memory data, the built-in memory counter can store up to 2000 (group) independent measuring data.
- Backlight automatically shut down and automatic power-down features.
- Large LCD display with white light.
- Using panel calibration technology, no need to

open the case for calibration.

- Available alkaline batteries, Ni-Hi battery, battery door can be convenient to replace the battery and fuse.
- Standard USB jack of a 2.4G wireless communication module to connect with a PC.
  (Note: the meter with wired communication function uses isolate serial communication module of a compatible USB jack to connect with a PC)
- By friendly man-machine interface, Users can get data in the Meter conveniently. Users can storage, deal with and manage the data which display by graph and form.

Open-case Inspection

Open the case to check, if the Meter is damaged or something is missing, contact the Company or the place of purchase immediately.

Accessories:

A pair of test lead

A copy of user's manual

A piece of WIFI

Note: A piece of USB wire replaces WIFI for meter with wired communication function

Safety Information

The Meter complies with:

- IEC61010.1: 2001
  CAT. III (Max voltage: AC/DC1000V)
  CAT. IV (Max voltage: AC/DC600V)

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

W**arning**	identifies conditions and actions that pose hazards to the user;
Caution	identifies conditions and actions that may damage the meter or the equipment under test;
Note	identifies symbols of the operation and explanations of the features. International symbols used on the meter and in this manual are explained in Table 1-1.

⚠ Warning

To avoid possible electric shock or personal injury, follow these guidelines:

- **Use the meter as the instructions of the producer; otherwise, the protective function shall be invalid.**

- **Do not use the meter if it is damaged. Before you use the meter, inspect the case. Look for cracks or missing plastic. Pay particular attention to the insulation surrounding the connectors.**
- **Take the leads off the meter before unlock the battery door.**
- **Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads before you use the meter.**
- **Do not use the meter if it operates abnormally. Protection may be impaired. When in doubt, have the meter serviced.**
- **Do not operate the meter around explosive gas, vapor, or dust.**
- **Do not apply more than the rated voltage, as marked on the meter, between terminals or between any terminal and earth ground.**
- **Make sure the meter works normally as per testing a known voltage. Do not use the meter if it operates abnormally. When in doubt, have the meter serviced.**
- **To avoid possible electric shock caused by false reading due to existing alternating voltage in all the direct current functions, including manual and auto ranging, make sure whether there is any alternating voltage existing or not before selecting a direct voltage range equals to or higher than the alternating voltage.**
- **To avoid false readings, which could lead to possible electric shock or personal injury, replace the batteries as soon as the low battery indicator appears.**
- **Do not touch the exposed wine, connector or unused input jack or circuit under test when the meter is working.**
- **Use only type AAA batteries, properly installed in the meter case to power the meter.**
- **Use caution when working above 30 V ac rms, 42 V peak, or 60 V dc. Such voltages pose a shock hazard.**
- **Avoid working alone.**
- **When using the probes, keep your fingers behind the finger guards on the probes.**
- **Connect the common test lead before you connect the live test lead. When you disconnect test leads, disconnect the live test**

lead first.

- **To avoid possible fire or electric shock, do not connect TC with the live circuit.**

⚠ Caution

To avoid possible damage to the meter or to the equipment under test:

- **Set the rotary switch on the right range. Do cut off the testing leads and circuit before switching. Forbid to switch during the measuring process.**
- **Cut off the power and complete discharge before measuring resistance, capacitance, diodes, or continuity with the live circuit.**
- **Before measuring current, check the meter's fuses (see Section 6 "Testing the Fuses"). Turn power OFF to the circuit before connecting the meter to the circuit. Remember: Plug the meter with the circuit in series when measuring current and do not connect test lead in parallel with any circuit.**

Symbols

Symbols used on the meter and in this manual are explained in Table 1-1.

Table 1-1. International Electrical Symbols

Symbols	Meaning	Symbols	Meaning
~	Alternating current	⏚	Earth ground
⎓	Direct current	▭	Fuse
≂	Alternating and direct current	⧈	Double insulated
⚠	Important information	▬	Battery
CE	complies with European Union（European Union）requirements		

CAT III	Overvoltage Category III, Pollution Degree 2 (per IEC61010) refers to the level of Impulse Withstand Voltage protection provided. Typical locations include: Three-phase distribution including single-phase commercial lighting, Equipment in fixed installations, Lighting systems in larger buildings, and industrial spot equipments.
CAT IV	Overvoltage Category **IV**, Pollution Degree 2 (per IEC61010) refers to the level of Impulse Withstand Voltage protection provided. Typical locations include: Three-phase distribution including any outdoor electric line or equipment; any outdoor electric line; protective equipment of overcurrent of the front end in any electric meter.

Section Two
Getting Acquainted
Introduction

This section is to be acquainted with all the features and functions of the Meter.

Turning the Meter On

To turn the meter on, press⏻to power on and repress⏻ for more than 2 seconds to power off.

When the power is turned on, the meter starts to make self-diagnosis internally and displays on full screen. After this, appropriate operation should be carried out.

⚠Note

Power-on: To ensure the correct operation of the meter with power on. It is good practice to turn off the power supply pausing 5 seconds, and then restart the meter.

Automatic Power off

The default setting is: The meter will go into automatic power- off mode if uses have not changed the rotary switch position or pressed a button for a set period. The automatic power off is preset to 10 minutes.

From the Setup menu (see Section 5 “Changing the Default Settings”), Users can decide whether they want to use the function of the automatic

power-off or not.

Backlight On

To turn the backlight on, press the key to turn on and repress the key to turn off.

Automatic Backlight off

The automatic backlight off is preset to 10s. If Users do not turn off backlight within 10s, the meter will turn off backlight automatically.

Users can decide whether they want to use the function of the automatic backlight off or not (see Section 5 “Changing the Default Settings”).

Low Battery Indication

The battery indicator in the upper right corner of the display notifies you that the batteries are low and should be replaced.

Warning

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

If the battery indicator appears, it will lead to the shut-up of the storage function.

Outer Layout

See Figure 2-1.

Input Jack

Figure 2-2 and Table 2-1 explain the input jacks.

Rotary Switch

Figure 2-3 and Table 2-2 explain the measuring functions of the rotary function switch positions.

Display Unit

Figure 2-4 and Table 2-3 illustrate the meaning of every displaying unit.

Communication Terminal

You could use the DMMVIEW_G software to transfer the content stored in the meter and real time value to a PC.

(See Section 4 “Using Memory & Communications Features”)

Note: the meter with wireless communication does not have this terminal.

Press Key

Figure 2-5 and Table 2-4 show the Press Key

functions.

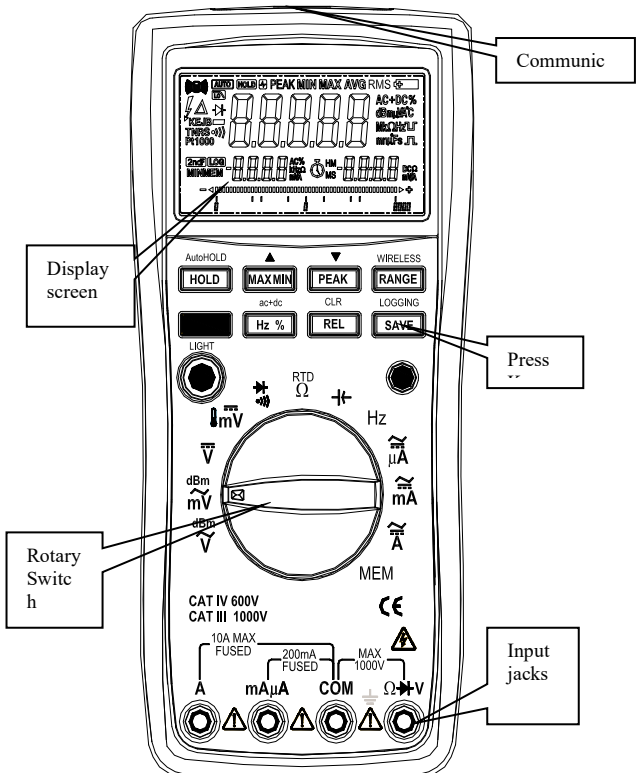


Figure 2-1. Outer Layout

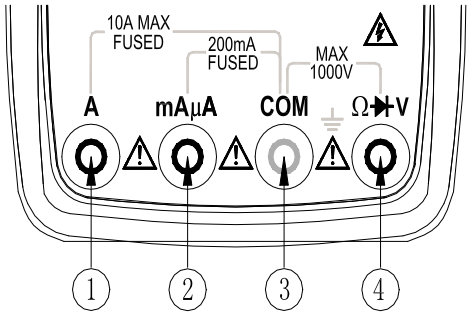


Figure 2-2. Input Jacks

Table 2-1. Input Jacks

Input Jacks	Function Illustration
1	Measuring Signal (+): direct and alternating current (A), frequency.
2	Measuring Signal (+): direct and alternating current (mA, μA), frequency.
3	Public (return) Jacks of all the measurement (-).
4	Measuring Signal (+): direct voltage, direct mV voltage, alternating voltage, alternating mV voltage, resistance, diodes, continuity, frequency, RTD, TC, dBm , AC+DC.

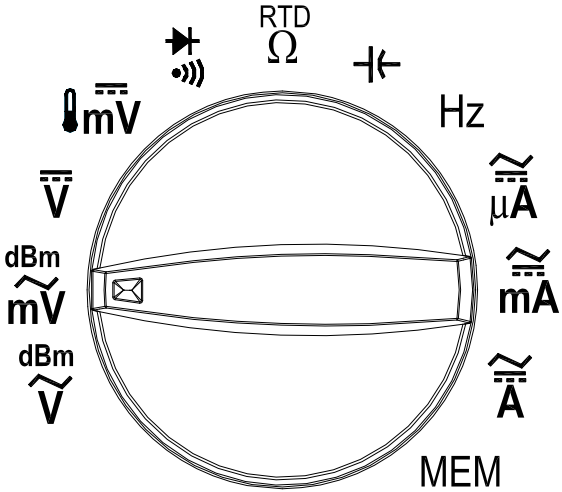


Figure 2-3. Rotary Switch

Table 2-2. Rotary Switch

Position	Rotary Switch Function	○Blue Key Function
dBm V	ACV Measurement	dBm
dBm mV	ACmV Measurement	dBm
V	DCV Measurement	None
mV	DCmV Measurement	TC Measurement
	Continuity Testing	Diode Testing
RTD Ω	Resistance Measurement	RTD Testing
	Capacitance Measurement	None
Hz	Frequency Measurement	None
µA	DCuA Measurement	AC
mA	DCmA Measurement	AC
A	DC current	AC
MEM	Read or clear the stored data in the Meter. See Section 4 for the detailed information.	None

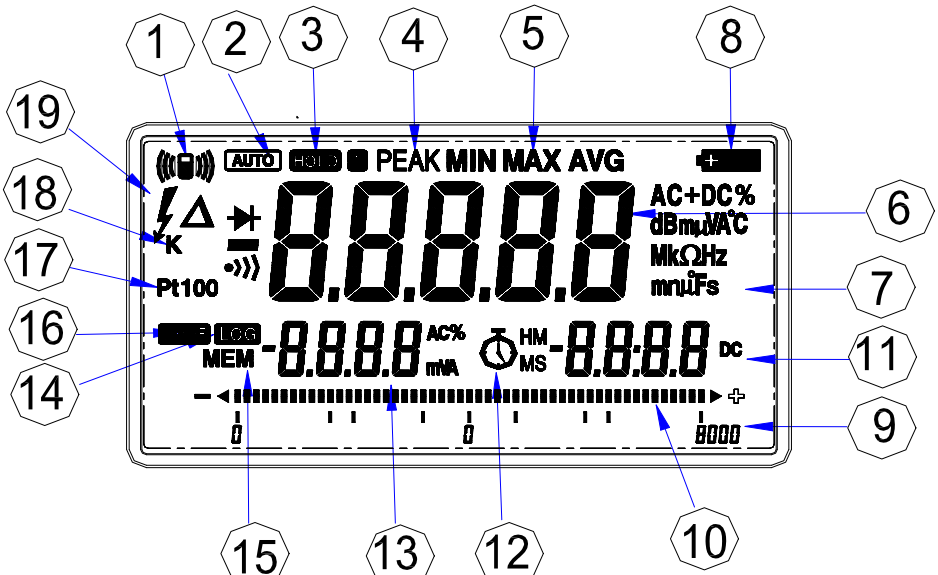


Figure 2-4. Display Unit

Table 2-3. Display Unit

No.	Unit	Meaning
1		Wireless communication indicator of the meter
2		indicates the meter works in automatic range shift mode
3		Display Hold: to hold present value in the main display Auto Hold: to hold newest readings
4	**PEAK**	Peak Hold: to hold peak value
5	**MIN MAX AVG**	Ultimate value measurement, main screen shows MIN, MAX, AVG value in cycle while first auxiliary screen shows measuring value and secondary auxiliary screen shows corresponding time.
6		Main screen (20000 digital)
7	**Ω、kΩ、MΩ**	Unit of resistance: Ohm, Kilohm, Megohm
	Hz、kHz、MHz	Unit of frequency: Hertz, Kilohertz, and Megahertz

	A、mA、μA	Unit of current: Amperes(amps), Milliamp, Microamp
	V、mV	Unit of voltage: Volt, Millvolt
	nF、μF、mF	Unit of capacitance: Nanofarad, Microfarad, Millifarad
	°C、°F	Degrees Celsius(default)or Fahrenheit
	dBm	For ac volts functions , reading is shown in decibels of power above or below 1mW (dBm)
	AC+DC	AC current, DC current and DC + AC current
	%	REL% measurement , shows that the relative percentage
8		Low battery power indication. If the symbol displays, it indicates the batteries power will be exhausted. ⚠ Warning To avoid false readings, which could lead to possible electric shock or personal injury, replace the batteries as soon as the battery indicator  appears in the LCD.

9	-8.8:8.8	In the MAX/ MIN mode, display time In the dBm function, display reference resistance impedance In the TC function, display indoor temperature if cold-compensation is open In the AC + DC function, display DC value
10	8888	display selected range
11		Analog indicator display. The polarity symbol of the analog bar indicates the signal polarity, the symbol "►"on the right of the analog bar means the over range situation.
12		situation of time indictor display part
13		display voltage value and resistance value respectively in dBm and TC、RTD Display real time measured value in MAX / MIN, HOLD, AUTO HOLD and REL%modes. display AC current value in AC + Hz mode; display AC current value in AC + DC mode;
14	MEM	save stored mode
15	LOG	log stored mode
16	2ndF	select the yellow key（▭）function
17	PT100	the type of RTD
18	K	the type of TC

19		Continuity measurement
		> 30V AC , DC and AC + DC voltage may be present at the input terminals
		Relative measured value
		Diodes Test

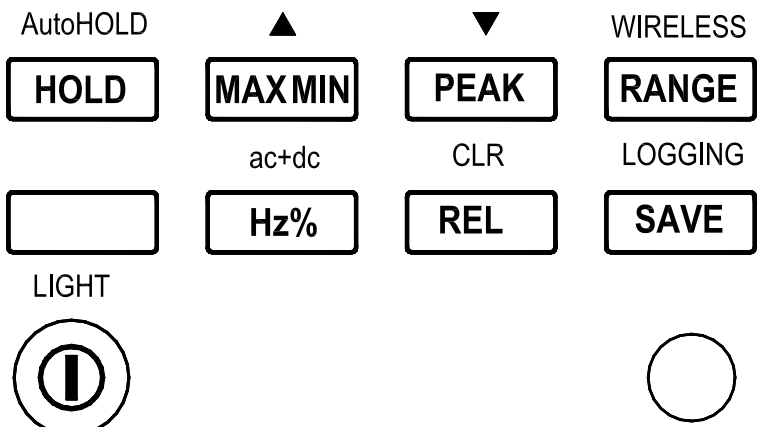


Figure 2-5. Press Keys

Table 2-4. Press Keys

Press Keys	Description	Yellow Key Function	Description
Note **Press ▭ to access "Yellow Key Functions", and ▬ will be on display.**			
○	Press this key to access blue functions on the rotary switch. In the system setup mode, press this key to change the default-operating configuration of the meter by changing setup options made at the factory.	None	
AutoHOLD HOLD	Press to freeze the display value. Press again to release the display.	▭ HOLD	Press to begin Auto HOLD; the last stable reading is displayed. To exit Auto HOLD mode, press the key again.
▲ MAXMIN	In measuring mode, press the key to start retaining min, max, and average values. Press successively to display MAX, MIN, and AVG value. Press for more than 2 seconds to stop. In MEM mode, press to read the previous record of present storage area.	None	
▼ PEAK	In the measurement mode, press to start PEAK mode, and in the PEAK mode, press to store the present PEAK value and successively to display PEAK maximum value, PEAK minimum value. Press for more than 2 seconds to exit PEAK model. In MEM mode, press to view the next data stored.	None	

WIRELESS RANGE	In the measurement mode, Exit AUTO and enter MANUAL ranging. In MANUAL, select next input range. Press the key more than 2 seconds, to enter AUTO mode.	WIRELESS RANGE	In the measurement mode, press these grouped keys indicating that the wireless communication function has been opened and repress them meaning to close wireless communication function.
Hz %	In AC measurement mode, successively press the key to select AC + Hz, repress to enter into frequency and duty cycle measurement, press again to enter into AC measurement function.	ac+dc Hz %	In the DC measurement mode, press these grouped keys to enter AC + DC mode. Repress to exit from AC + DC mode.
CLR RLE	In the measurement mode, press the key to store the present reading as reference value for error, backward reading is the difference for relative reference value. Repress the key to display difference in % mode. In MEM mode, press the key to clear the present memory.	None	
LOGGING SAVE	In the measurement mode, press the key to store present reading , manual SAVE mode. In the MEM mode, press the key indicating to read data from LOGG records. Store setting value in the meter's setting mode.	SAVE	If logged area is empty, press to enter logged mode. Press the key once again to exit.

⏻	Turn on the power or backlight. Press for less than 2 seconds to turn on or off the backlight and more than 2 seconds to power off.	▭ ⏻	Press the key to enter the operating configuration of meter. Repress to exit from the setting mode.

Display Hold Mode（Display HOLD）

Press AutoHOLD HOLD to enter the Display HOLD mode, then freezes the present reading in the primary display (The HOLD is displayed). New readings now appear in the first secondary display. See Figure 2-6. Press AutoHOLD HOLD again to exit the Display HOLD mode.

Note

In the MIN MAX mode, Display Hold functions like a toggle, interrupting and resuming the MIN MAX operations.

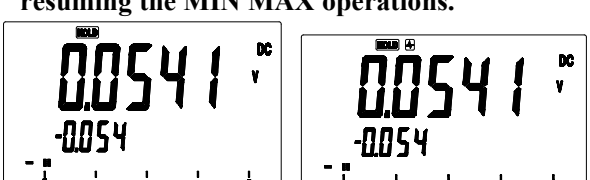


Figure 2-6. Display Hold and Auto Hold

In AC + Hz, AC + DC measuring mode, press AutoHOLD HOLD and then freezes the whole display screen.

If operating the meter to record data, you cannot use Display Hold while logging data. Contrarily, you cannot log data while Display Hold.

Auto HOLD Mode（Auto HOLD）

⚠ Warning

Auto HOLD mode does not capture unstable or noisy readings. Do not use Auto HOLD mode to determine that circuits are without power.

Press ▭ AutoHOLD HOLD to enter the Auto HOLD mode. Auto HOLD mode freezes the present reading in the main display (The symbol HOLD A displays). New readings now appear in the

first auxiliary screen (See Figure 2-6). When the meter detects a new, stable reading (>4% change from last stable reading), it beeps and displays the new reading in the main display. You can also force a main display update by pressing AutoHOLD HOLD .

If you remove the test leads (open the input), the meter retains the last frozen main screen. You cannot use Auto HOLD while MAX MIN, REL, AC+Hz, AC+DC ,PEAK mode or data logging is active .You cannot initiate logging while Auto HOLD function is active.

Repress [ ] AutoHOLD HOLD to exit the Auto HOLD mode.

Peak HOLD Mode （PEAK）

Peak HOLD can capture transient signal events as short as 500 us, but with decreased accuracy (only 4 display digits are allowed).

Peak HOLD mode is only available in DC voltage and current.

Press PEAK to enter the PEAK mode, peak value in the main screen (The “PEAK” is displayed). See Figure 2-7. It beeps when the meter detects a new value of PEAK. Press PEAK for more than 2 seconds to exit the PEAK mode.

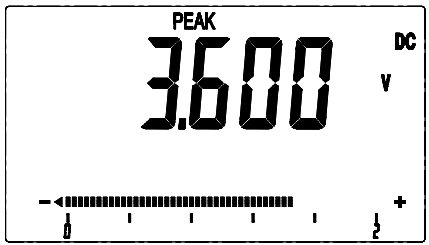


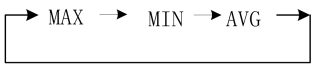
Figure 2-7. Peak Hold Mode

Using MAX MIN Mode

The MIN MAX mode stores minimum (MIN) and maximum (MAX) input values. MIN MAX mode also calculates an average (AVG) of all readings taken since the mode was activated (except OL). When the input goes below the stored minimum value or above the stored maximum value, the meter beeps and stores the new value. In addition, the meter displays the present measurement value in the first auxiliary screen and the new value in the main screen.

Press MAXMIN the MAX, MIN and AVG value will be stored as the present displaying reading, and “MAX” will be on display first. Each subsequent press of MAXMIN steps through the minimum (MIN),

average (AVG) and back to the maximum reading.



In the MAX MIN mode, the present measured value displays in the first auxiliary screen. The time of showing MAX, MIN or entering MAX MIN mode displays in the second auxiliary screen.

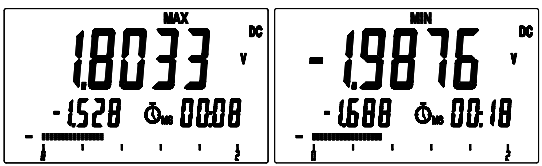


Figure 2-8. MAX MIN Mode

Selection of MAX MIN mode will turn off auto range and lock present range, so make sure the meter is in correct range before choose this mode.

Press the key MAXMIN for more than 2 seconds to exit MAX MIN mode.

Using HOLD with MAX MIN or PEAK

You can press AutoHOLD HOLD to enable HOLD mode while MAX, MIN or PEAK mode is active. No further minimum, maximum, or average updates occur while the HOLD mode is enabled.

Press AutoHOLD HOLD again to exit the HOLD mode.

Using Relative Mode (REL)

Selecting Relative mode causes the meter to zero the display and store the present reading as a reference for subsequent measurements.

- Press CLR REL once to select the Relative Mode. (The meter cannot enter Relative Mode if the present display is OL) the meter enters manual range when Relative Mode is selected. The reference appears in the second auxiliary screen. The new measurement shows the first auxiliary screen. The difference between the reference and a new measurement appears in the main screen (See figure 2-9).
- Press CLR REL a second time to enter the REL% mode and the reference value displays on the first auxiliary screen and the REL% value between the present measuring value and the reference value displays on the main screen. That is:

$$REL\% = \frac{(pmv - rv)}{rv} * 100\%$$

Pmv refers to present measuring value; rv refers to reference value.

- In REL%, △% appears on the display.
- Press REL a third time to exit the Relative Mode.

⚠ Warning

Do be careful for the possible dangerous voltage in the Relative **Mode.**

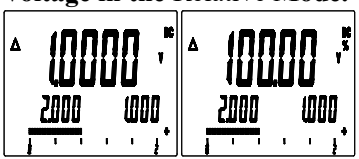


Figure 2-9. Relative Mode

Selecting the Range

Press WIRELESS RANGE to select a fixed range.

Auto ranging ("AUTO"lighted in the display) always comes on initially when you select a new function. In auto range, the meter selects the lowest input range possible, ensuring that the reading appears with the highest available precision (resolution).

If AUTO（AUTO） is already on, press WIRELESS RANGE to enter MANUAL ranging in the present range(the present range). You can then select the next manual range each time you press WIRELESS RANGE. Return to auto ranging （AUTO） by pressing WIRELESS RANGE more than 2 seconds.

Note

You cannot use WIRELESS RANGE in diode test, continuity, low frequency, pulse width MAX MIN, REL and PEAK functions. It only has the Manual range with the RTD, TC functions.

Using AC+DC or AC+Hz Mode

In the AC function, press Hz% once to enter the AC + Hz measuring mode. Now the main screen shows frequency and the first auxiliary screen displays AC value. Press ac+dc Hz% the second time to enter the frequency duty cycle mode, the main display shows frequency value and the first auxiliary screen displays positive duty cycle. See Figure 2-10 and Figure 2-11. Press ac+dc Hz% the third time to exit from the AC + Hz measuring mode.

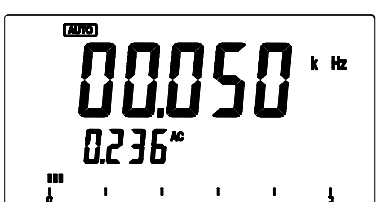


Figure 2-10. AC+Hz Measuring Mode

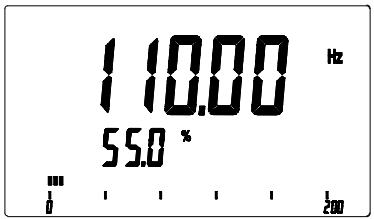


Figure 2-11. Frequency and duty cycle

In the DC function, press to enter the AC + DC measuring mode. Now the main screen shows AC+DC value and "AC +DC" symbol. The first auxiliary screen displays AC value and AC symbol. The second auxiliary screen display DC value and the "DC" symbol, respectively. (See Figure 2-12) Press again to exit the AC + DC mode.

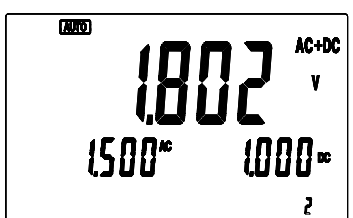


Figure 2-12. AC+DC Measuring Mode

In hereinbefore two modes, some modes are invalid such as Auto HOLD（Auto HOLD）, PEAK（PEAK）, MAX MIN（MAX MIN）, REL%(REL%) etc.

Section Three
Making Measurements

Introduction

This Section explains how to make measurements.

Most measurement functions can be selected by using the rotary switch.

White letters besides the Rotary Switch identify primary functions; blue letters identify alternative functions. Press the blue key to access these alternate functions.

Frequency-related functions could be selected when the rotary switch is in any of the AC voltage and current position.

Measuring Voltage

Voltage is the difference in electrical potential between two points. The polarity of ac (alternating current) voltage varies over time, while the polarity of direct current voltage is constant over time.

Ranges available in volts functions are:

- dBm
  2.0000V，20.000V，200.00V，1000.0V
-
  2.0000V，20.000V，200.00V，1000.0V
- dBm
  200.00mV
-
  200.00mV

Measuring AC Voltage (See Figure 3-1)

1. Set the rotary switch to "dBm" position, and the symbol "**AC**","**V**"will be on display or set the rotary switch to "dBm" position, and "**AC**","**mV**" will be on display
2. Insert the black lead into "**COM**" terminal, and the red lead into the "**Ω⏭V**" terminal.
3. Connect the leads to the testing power or negative load in parallel.
4. Read the measuring results from the screen.

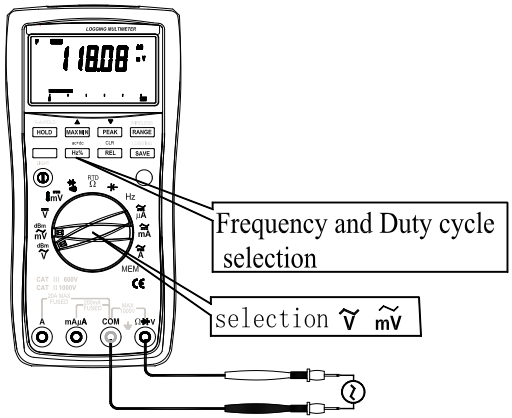


Figure 3-1. AC Voltage Measurement

Press ac+dc Hz % to display the frequency and duty cycle of the tested signals.

⚠Warning

- **Do not apply more than DC 1000 V or AC 750V rms voltage; the meter will possible be damaged though the value could be displayed.**
- **Indicator" ⚡ " is on display for safety note when 30 V voltage present at the**

input terminals.

- **The meter beeps constantly if the input voltage is more than AC 750V rms, which is over the meter's range.**

dBm Measurements in AC Volts Functions(See Figure 3-2)

The ac volts functions allow you to display readings as deviations in dB (decibels) above or below an established level.

Set up dBm measurements with the following procedure:

1. Turn the Rotary Switch to "$\overset{dBm}{\tilde{V}}$"or"$\overset{dBm}{\tilde{mV}}$"voltage measurement position.
2. Press the blue key to select dBm measurement function. The value displayed on the main screen is the dBm value, the value in the first auxiliary screen is AC voltage value and the value in the second auxiliary screen is referenced impedance value.
3. Repress the blue key to turn off the dBm function.

Normally, dB is measured as dBm, which is a measure of decibels relative to 1 milliwatt. The meter assumes a resistance of 600Ωin making this calculation. This resistance can be set for any value for 1Ω to 2400Ω, using the meter's setup capabilities (see Section 5.) to change the resistance.

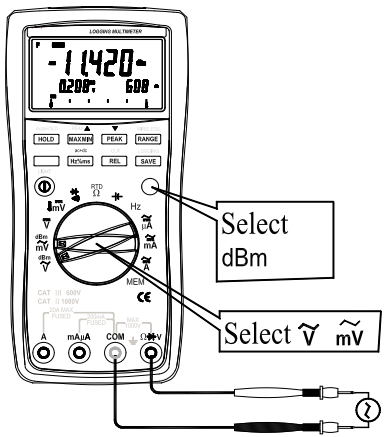


Figure 3-2. dBm Measurement

Note

If dBm is displayed, check that the reference resistance value closely matches the impedance of the system being measured.

dBm is calculated with the following formula:

$$dBm=10\times lg(1000\times AC\ Voltage^2/\ Reference\ Impedance)$$

Measuring DC Voltage (See Figure 3-3)

1. Set the rotary switch to "$\overline{\overline{\mathbf{V}}}$" position, and the symbol "**DC**","**V**"will be on display or set the rotary switch to "**f**"position, and "**DC**","**mV**" will be on display.
2. Insert the black lead into "**COM**" terminal, and the red lead into the "**Ω⇻V**"terminal.
3. Connect the leads to the testing power or negative load in parallel.
4. Read the measuring results from the screen.

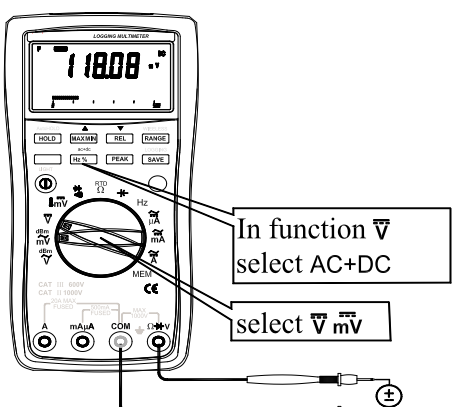


Figure 3-3. DC Volatage Measurement

In function , select AC+DC ; select V mV.

⚠ Warning

- **Do not apply more than DC 1000 V or AC 750V rms voltage; the meter will possible be damaged though the value could be displayed.**
- **Indicator" ⚡ " is on display for safety note when 30 V voltage present at the input terminals.**
- **The meter beeps constantly if the input voltage is more than AC 750V rms, which is over the meter's range.**

Measuring TC(See Figure 3-4)

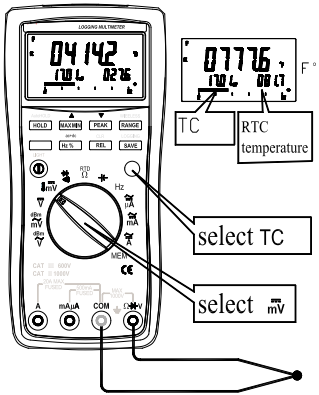


Figure 3-4. TC Measurement

1. Set the rotary switch to "f" position, and press blue key (○) to select TC measurement.
2. Insert TC into "COM"and "Ω⏚V"terminals, make sure the TC jack with symbol "+" is connected into the "**Ω⏚V**" terminal.
3. Read the measuring results from the screen.

The temperature is shown on the main screen, the thermo-electrical potential on the first auxiliary screen and the ambient temperature on the second auxiliary (if RJC is turn on).User can set whether open or close RJC (see Section 5).

⚠Warning

To avoid possible electric shock or personal injury, do not connect the TC with the live circuit.

Measuring Resistance (See Figure 3-5)

⚠ Warning

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

Resistance is a hindrance to the movement of current. The unit of resistance is ohm. The meter measures resistance in way of output a bit of current to the circuit.

The resistance range of the measured meter is 200.00Ω, 2.0000KΩ, 20.000KΩ, 200.0KΩ, 2.0000MΩ and 20.000MΩ, 60.0MΩ.

To measure resistance, proceed as follows:

1. Set the rotary switch to"Ω"position.
2. Insert the black lead into "COM"terminal, and the red lead into the "Ω⏚V"terminal.
3. Connect the leads to the tested power. Read the measuring results from the screen

⚠ Note

- **OL appears on the display if the resistance under test is open or the value surpasses the maximum range.**
- **Because the meter's test current flows through all possible paths between the probe tips, the measured value of a resistor in a circuit is often different from the resistor's rated value.**
- **The test lead can add 0.1Ω to 0.2Ω of error to resistance measurements. To test the leads, touch the probe tips together and read the resistance of the leads. If necessary, you can press REL to automatically subtract this value.**
- **Wait for several seconds for stable reading when measuring resistance more than 1MΩ.**

Measuring RTD(See Figure 3-6)

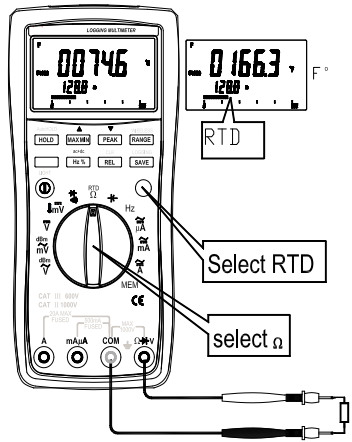


Figure 3-6. RTD Measurement

1. Set the rotary switch to "Ω"position, and press blue key (○) to select RTD testing.
2. Insert the black lead into "**COM**"terminal, and the red lead into the "**Ω⏚V**"terminal.
3. Connect the leads to the tested RTD.
4. Read the measuring results from the screen.

Testing Diodes(See Figure 3-7)

⚠Warning

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

Use the diode test to check diodes, transistors, and silicon-controlled rectifiers (SCR), and other semiconductor devices. The test sends a current through a semiconductor junction, and then measures the junction's voltage drop. A typical junction drops 0.5 V to 0.8 V.

To test a diode, proceed as follows:

1. Set the rotary switch to "" position, and press blue key (○) to select testing.
2. Insert the black lead into "**COM**"terminal, and the red lead into the "**Ω V**"terminal. The polarity of the black lead and red lead is "-"and "+" respectively.

Forward-bias reading: Place the red test lead on the component's positive terminal and place the black lead on the component's negative terminal. The reading is the approximate value of junction's voltage drop about 0.5 V to 0.8 V.

Reverse-bias reading: Place the black test lead on the component's positive terminal and place the red lead on the component's negative terminal. The display shows OL.

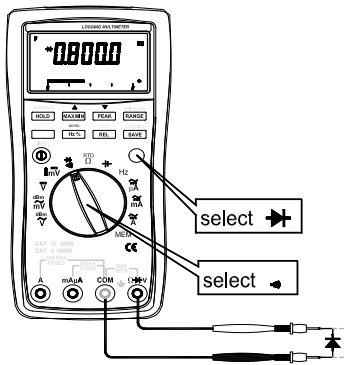


Figure 3-7. Diode Test

Select; select

Note

In the live diodes testing, the resistance of other pathways and between the probe tips will affect the reading of reverse-bias voltage.

Testing for Continuity (See Figure 3-8)

⚠ Warning

To avoid possible damage to the meter or to the equipment under test, disconnect circuit power and discharge all high-voltage capacitors before testing for continuity.

Continuity is the presence of a complete path for current flow. The continuity test features a beeper that sounds if a circuit is complete. The beeper allows you to perform quick continuity tests without having to watch the display.

To test continuity, proceed as follows:

1. Set the rotary switch to“ ” position.
2. Insert the black lead into “COM”terminal, and the red lead into the “Ω V”terminal.
3. Connect the leads to the two ends of the tested circuit.

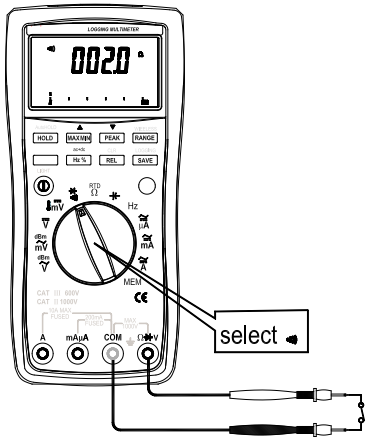


Figure 3-8 Continuity Test

Measuring Capacitance (See Figure 3-9)

⚠ Warning

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

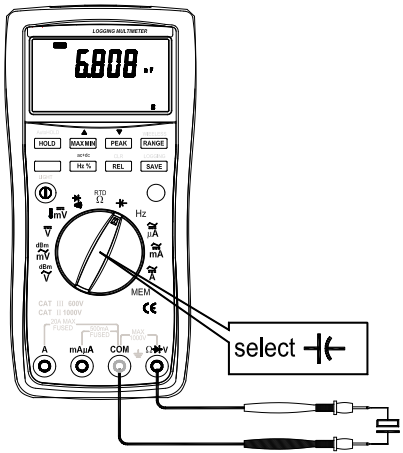


Figure 3-9. Capacitance Measurement Select

Capacitance is the ability of a component to store an electrical charge. The unit of capacitance is the farad (F). Most capacitors are in the nanofarad (nF) to microfarad (μF) range.

The meter's capacitance ranges are 10.000nF, 100.00nF, 1000.0nF, 10.000μF, 100.00μF, 1000.0μF, 10.000mF, 100.00mF。

To test capacitance, proceed as follows:

1. Set the rotary switch to"⊣⊢"position to select capacitance measurement.
2. Insert the black lead into "**COM**"terminal, and the red lead into the"**Ω⇥V**"terminal.
3. Connect the leads to the tested capacitance. Read the measuring results from the screen.

⚠ Note

- **OL appears on the display if the tested capacitance is open or the value surpasses the maximum range.**
- **If the tested capacitance is polar capacitance, then connect the red lead with the positive point and the black lead with the negative point.**
- **High capacitance test needs more time.**
- **To improve the measurement accuracy of small value capacitors, press with the test leads open to subtract the residual capacitance of the meter and leads automatically.**
- **The remaining voltage of capacitance, insulated impedance and dielectric absorption could cause measuring errors.**

Measuring Current (See Figure 3-10)

⚠Warning

- **Never attempt an in-circuit current measurement where the open-circuit potential to earth is greater than 1000 V. You may damage the meter or be injured if the fuse blows during such a measurement.**
- **You must open the circuit under test, then place the meter in series with the circuit.**

⚠ Caution

- **To avoid possible damage to the meter or to the equipment under test, check the meter's fuses before measuring current. Use the proper terminals, function, and range for your measurement. Never place the probes across (in parallel with) any circuit or component when the leads are plugged into the current terminals.**

To measure ac or dc current, proceed as follows:

1. Turn off power to the circuit and discharge all high voltage capacitors.
2. Insert the black lead into the "COM"terminal. Insert the red lead in an input appropriate for the measurement range as shown in Table 3-1.

Note

To avoid blowing the meter's 200 mA fuse, use the mAμA terminal only if you are sure the current is less than 200 mA.

3. If you are using **A** terminal, set the rotary switch to A.
4. If you are using **mA μA** terminal, set the rotary switch to μA for current below 2000μA, or mA for current above 2000μA.
5. The default setting is direct current, and the screen shows DC; press blue key (○) once to select alternating current measurement and the screen shows AC.

Table 3-1. Current Measurement

Rotary Switch	Input Jack	Range
μA	mAμA	200.00μA 2000.0μA
mA	mAμA	20.000mA 200.00mA
A	A	2.0000A 10.000A

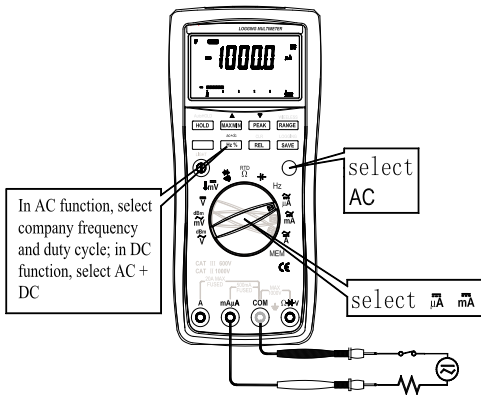


Figure 3-10. Current Measurement

6. Open the circuit path to be tested. Touch the red probe to the more positive side of the break; touch the black probe to the more negative side of the break. (Reversing the leads will produce a negative reading, but will not damage the meter).
7. Turn on power to the circuit, and read the measuring results from the screen.
8. Press ac+dc Hz % to measure AC+DC Current when Measuring DC current. Press ac+dc Hz % to measure frequency, duty cycle when Measuring AC current.
9. Turn off power to the circuit and discharge all high voltage capacitors. Remove the meter and restore the circuit to normal operation.

⚠Note

- **Start measuring from the high range if the current can't be evaluated.**
- **For safety, the measuring time should be limited within 15s, while the interval should be more than 10 min when measuring high current.**
- **If the input current is more than 1 0.000A, then the inner beeper sounds constantly indicating the value surpass the range.**

Measuring Frequency and Duty Cycle (See Figure 3-12)

Frequency is the number of cycles a signal completes each second. The meter measures the frequency of a voltage or current signal by counting the number of times the signal crosses a threshold level each second.

Duty cycle (or duty factor) is the percentage of time a signal is above or below a trigger level during one cycle.

Press ac+dc Hz % to measure Frequency and Duty

cycle ratio in AC voltage and current functions, the frequency is automatic range.

Table 3-2 lists the frequency and duty cycle range.

Measure Frequency and Duty cycle in Hz function. Proceed as follows:

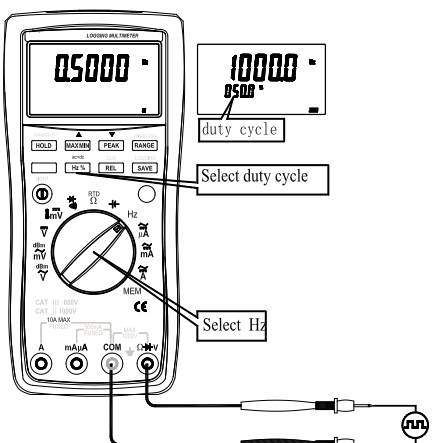


Figure 3-12. Frequency and Duty Cycle Measurement

1. Set the rotary switch to "**Hz**"position to select frequency measurement.
2. Insert the black lead into "**COM**"terminal, and the red lead into the "**Ω⊣◂V**"terminal.
3. Connect the leads to the tested frequency.
4. Press RANGE to measure frequency of relative range and Duty cycle.
5. Read the measuring results from the screen.

Section Four
Using Memory & Communications Functions

Section 4 shows you how to use memory and communication features available on the meters.

Types of Memory

The meter has two types of memory data: SAVE mode and LOGG mode.

Manually saved readings include primary and secondary readings and functions, the time stamp, and display icons representing various features in effect.

LOGG refers to Time Logging.

Time Logging: it stores the current data into memory once the setting interval time is up.

Table 4-1. Memory Capacity

Memory Mode	Memory Capacity
SAVE mode（SAVE）	1000 group
LOG mode（LOGG）	1000 group

⚠Note

- Undertake “clearing memory data” operation first if the date storage functions are used firstly.
- The data storage mode is unavailable when the meter is in D.H, A.H function. The range cannot be changed when the data storage functions are active.
- In MEM position, ---- on the screen indicates data storage is empty and could save the data; FULL on the screen indicates data storage is full and will stop saving.
- In LOG mode, no data could be saved if there is a recording (no matter the storage is full or not).The user should clear off the memory and then start to save. In LOG mode, the meter will return to measuring mode when the storage is full.
- Low battery indicator ▬ appears on the screen to indicating forbid saving.

Save Mode（SAVE）

Saving the current readings to meter’s memory, press LOGGING SAVE to complete a manual save and beeps. At this moment, “SAVE“ displays on the main screen, the index number display increments by one in the first auxiliary screen. After one second, the meter returns to the measurement mode. “FULL“ appears if no room is available in the saved readings memory (after 100 saves).

Starting Logging（LOGG）

Proceed as follows:

1. Set the interval time of storage real time data (see to Section 5). In Time Logging mode, if the interval time is set 0, then the meter will store all the measurement signals.
2. Press LOGGING SAVE to start logging mode. If the LOGG readings memory has data, then display FULL, can’t storage data; otherwise, start logging mode, display LOG on screen. Each store a record, the buzzer sounded beeps, the main screen shows the current measurement data, the index number display increments by one in the first auxiliary screen,

the second auxiliary screen shows recording time. FULL appears if no room is available in the logged readings memory (after 1000 log).

Stopping Logging

Logging stops when one of the following occurs:

- Press [LOGGING SAVE] key.
- Change the rotary switch position.
- Logged readings memory becomes full.

Viewing Memory Data

To view memory data as follows:

⚠ Warning

To avoid electric shock, disconnect the test leads when the rotary switch is in the MEM position.

1. Disconnect the input leads at the measurement source.
2. Turn the rotary switch to the MEM position and read the last SAVE record in meter default state.
3. Press [ ] or [LOGGING SAVE] for logged reading, LOG appears in the display.
4. Press [MAIN] and [PEAK] to forward / backward to read the current record of data. If the storage is empty, then display -----; otherwise shows record data on the Main Screen, the first auxiliary screen shows record number.

Clearing Memory Data

Use the following procedure to clear memory data:

⚠ Warning

To avoid electric shock, disconnect the test leads when the rotary switch is in the MEM position.

1. Disconnect the input leads at the measurement source.
2. Turn the rotary switch to the MEM position. At this moment, default clear saved readings memory.
3. Press [ ] or [LOGGING SAVE] to clear memory data, LOG appears in the display.
4. Press [ ], appears in the display and inquiry whether to clear the memory data or not, if YES, press [ ] again to clear the current memory; "" displays on screen, confirm cleared the area data, after 1 second display "-----"; else press other key to cancel.

Using Communication Function

Wired Communication

⚠Warning

Make sure your PC has been connected with

the earth ground when employing this function!

Refer to the DMMVIEW_G-CD Software Guide or the on line help.You can use the USB Interface Cable and DMMVIEW_G-CD software to transfer the contents of a meter and real time measuring value to a PC, and data processing.

Wireless Communication

1. Put the WIFI receiver to the USB port of a PC.
2. Press ▭ and WIRELESS RANGE keys to start wireless communication function.
3. Please refer to DMMVIEW_G-CD software manual, click of DMMVIEW_G-CD software can transfer the contents of the storage of the meter and real-time measuring value to the PC and undertake data settlement.

Section Five
Changing the Default Settings

Introduction

The meter allows you to change the default-operating configuration of the meter by changing setup options made at the factory.

Many of these setup options affect general meter operations and are active in all functions. Others are limited to one function or group of functions.

Selecting Setup Options

To enter the Setup mode, turn the meter on, the first press▭ and then press0.

In the Setup mode, each setup option appears in the first auxiliary screen and the default value appears in the Main Screen. Press 0 to change the setup option. Press LOGGING SAVE to store the set value (SAVE on the Main Screen indicates the maintained item has been stored).

To exit the Setup mode, press▭ .

Table 5-1. Changing the Default Settings

Selection		Function	Factory Default
APOF	Power off time	Set Range: 0~9999 min, use Hz % (ac+dc) or REL (CLR) to select digit flashes. Use MAXMIN or PEAK to increment or decrement digit. Set zero to cancel auto power-off function.	10 minutes
bLOF	Backlight time	Set Range: 0~9999, use Hz % (ac+dc) or REL (CLR) to select digit flashes. Use MAXMIN or PEAK to increment or decrement digit. Set zero to cancel auto turn backlight off function.	10 seconds
tEPU	Temperature units	Use MAXMIN or PEAK to select °C or °F.	°C
tC-J	TC RJC	Use MAXMIN or PEAK to select ON or OFF.	ON
CnOS	dBm reference value	Set Range: 1~2400, Use Hz % (ac+dc) or Hz % (ac+dc) to select digit flashes. Use MAXMIN or PEAK to increment or decrement digit.	600Ω
bEEP	buzzer	Use MAXMIN or PEAK to select ON or OFF.	ON
L9tE	Beep	Set Range: 1~9999, Use Hz % (ac+dc) or REL (CLR) to select digit flashes. Use MAXMIN or PEAK to increment or decrement digit.	1 second
FACt	Restore factory default	Press SAVE (LOGGING), SAUE appears in the Main Screen to indicate return to the factor default.	- - - - -

Section Six
Maintenance

This section provides some basic maintenance procedures. Repair, calibration, and servicing not covered in this manual must be performed by qualified personnel. For maintenance procedures not described in this manual, contact a Service Center.

General Maintenance

- Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.
- Take off the battery if you will not use the meter for a long time.
- Dirt or moisture in the terminals can affect readings and can falsely activate the Input Alert feature. Clean the terminals as follows:
  1. Turn the meter off and remove all test leads.
  2. Shake out any dirt that may be in the terminals.
  3. Soak a new swab with alcohol. Work the swab around in each terminal.

Testing the Fuses

⚠ Warning

To avoid electrical shock or personal injury, remove the test leads and any input signals before replacing the battery or fuses. To prevent damage or injury, install ONLY specified replacement fuses with the amperage, voltage, and speed ratings.

To check the fuse, proceed as follows:

1. Set the rotary switch on mA or μA.
2. Insert the black lead to **COM** jack and red lead to **mA** μA jack.
3. Using an ohmmeter, check the resistance between the meter tested leads .If the resistance is about 1Ω, the fuse is good. An open reading means that fuse F1 is blown.
4. Set the rotary switch on A.
5. Insert the black lead to COM jack and red lead to **A** jack.
6. Using an ohmmeter, check the resistance between the meter tested leads .If the resistance is about 0.01Ω, the fuse is good. An open reading means that fuse F2 is blown

Table 6-1. Fuse Specifications

F1	10A/250V FAST Φ6×30mm
F2	0.2A/250V FAST Φ5×20mm

Replacing the Fuses

⚠Warning

To avoid electrical shock or damage to the meter, only use replacement fuses specified in Table 6-1.

Referring to Figure 6-1, replace the meter's fuses as follows:

1. Turn the meter off and remove the test leads from the terminals.
2. Take off protector of the meter. Then remove the battery access door by using a standard-blade screwdriver to turn the battery door screws one-quarter turn counterclockwise.
3. Remove either fuses by gently prying one end loose, then sliding the fuse out of its bracket.
4. Install ONLY specified replacement fuses with the amperage, voltage, and speed ratings.
5. Reinstall the battery door. Secure the door by turning the screws one-quarter turn clockwise.
6. Reinstall the meter's protector.

Replacing the Batteries

The meter needs four AAA alkaline batteries.

⚠Warning

To avoid electrical shock:

- **Remove test leads from the meter before opening the battery door.**
- **Close and latch the battery door before using the meter.**

⚠ Note

- **The new and old Batteries can not be mixed.**
- **Take out the batteries if the meter won't be used for a long time.**
- **Despise the old batteries in accordance with the local law.**

Replace the batteries as follows. Refer to Figure 6-1

1. Remove the test leads and turn the meter OFF.

2. Take off the protector of the meter and then with a standard blade hand screwdriver, turn each battery door one-quarter turn counterclockwise, so that the slot is parallel with the screw picture molded into the case.
3. Replace the batteries and reinstall the battery door. Secure the door by turning the screws one-quarter turn clockwise.
4. Reinstall the meter's protector.

⚠ Caution

Make sure the battery's odes are in accordance with the symbols illustrated in battery pool when replacing them.

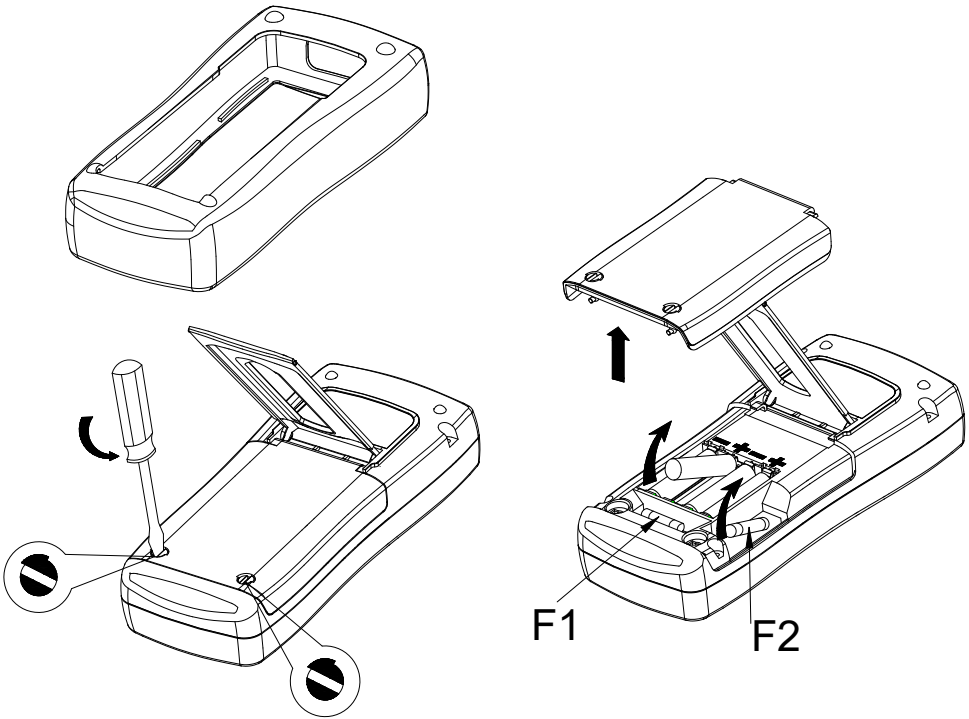


Figure 6-1. Battery and Fuse Replacement

Section Seven
Specifications
Safety and Compliance

Maximum voltage between any terminal and earth ground.	1000V dc or ac RMS voltage
Legal Compliance	Complies with IEC61010.1-2001 to 600V Over voltage IV Pollution Degree 2 and IEC61010.1-2001 to 1000V Over voltage III Pollution Degree 2. (Safety Standard issued by IEC)
Surge Protection	6kV(According IEC61010-1:2001)
Fuse Protection for mA or µA inputs Fuse Protection for A input	0.2A 250V FAST Fuse 10A 250V FAST Fuse
Identification tags	CE

Physical Specifications

Display(LCD)	Digital: 22000 counts primary display; 2200 counts secondary display; updates 24/second. Analog: 51 segments, updates 24/second.
Operating Temperature	0～50℃
Storage Temperature	-10～55℃
Relative Humidity	0℃～30℃ ≤75% 30℃～40℃ ≤50%
Altitude	0-2000m(according to IEC61010　CAT. III,1000V;　CAT. IV,600V)
Battery Type	4×AAA alkaline battery，NEDA，LR03
Power	MAX 60mVA / 625mVA(turn backlight on)
Temperature coefficient	0.15 × (specified accuracy)% / °C, range<18 °C　or >28 °C)
EMC	Complies with IEC61326-1,Group 1,Class B
Size	205×95×42mm(plus protector)
Weight	About 500g(plus protector)
Calibration Interval	1 Year

Feature Summary

Double digital display Analog display	Primary: 22000 counts; Secondary: 2200 count Analog: 51 segments, updates 24 times /second.
Backlight	White LED backlight for clear readings in poorly lighted areas
AC+DC TRMS AC TRMS specified to 1kHz	Choices for AC only, AC , DC and AC+DC dual display
dBm	User selectable impedance references for dBm
Auto HOLD	Holds readings on display
Duty cycle	Measure signal on or off time in %
MIN MAX mode	Record maximum, minimum, and average values. 24-hour clock for MAX or MIN, elapsed time for AVG.
PEAK mode	PEAK captures peaks to 1us.
Closed-Case Calibration	No internal adjustments needed.
Battery / Fuse Access Door	Battery or fuse replaceable without voiding calibration
Wireless Communication	2.4GHz wireless communication

Basic Specifications

Function		Range / Description
DC voltage		0 to 1000V
AC voltage,TRMS		20mV to 760V
DC current		0 to 10A
AC current,TRMS		20uA to 10A
Resistance		0 to 60MΩ
Capacitance		0.5nF to 110.00mF
Diode		About 3.5V
TC Test		K
RTD Test		Pt100
Frequency		3Hz to 9.999MHz
Storage reading	SAVE	1000 group
	LOGG	1000 group

Detailed Accuracy Specifications

Accuracy is specified for a period of one year after calibration, at 23±5ºC, with relative humidity to 75%.

Accuracy specifications are given as: ± ([% of reading] + [number of least significant digits]) (“Counts” refers to the number of increments or decrements of the least significant digit).

AC mV, ACV, AC uA, AC mA and ACA specifications are ac couple, true rms and are valid from 10% % of range to 100% of range. AC crest factor can be up to 3.0 at full-scale.

DC Voltage Measurement

Function	Range	Measurement Range	Resolution	Accuracy
DCmV	200mV	-220.00mV～220.00mV	0.01mV	0.05%+4
DCV	2V	-2.2000V～2.2000V	0.1mV	0.05%+4
	20V	-22.000V～22.000V	0.001V	0.05%+4
	200V	-220.00V～220.00V	0.01V	0.05%+4
	1000V	-1000.0V～1000.0V	0.1V	0.1%+4

AC Voltage Measurement

Function	Range	Measurement Range	Resolution	Accuracy
ACV	200mV	0.00mV～220.00mV	0.01mV	1%+40(<400Hz） 3%+40(>400Hz）
	2V	0.0000V～2.2000V	0.0001V	0.5%+40(<400Hz） 3%+40(>400Hz）
	20V	0.000V～22.000V	0.001V	0.5%+40
	200V	0.00V～220.00V	0.01V	0.5%+40
	1000V	0.0～760.0V	0.1V	1%+40

AC + DC Voltage Measurement

Function	Range	Measurement Range	Resolution	Accuracy
ACV+DCV	2V	0.0000V～2.2000V	0.0001V	0.5%+40(<400Hz） 3%+40(>400Hz）
	20V	0.000V～22.000V	0.001V	0.5%+40
	200V	0.00V～220.00V	0.01V	0.5%+40
	1000V	0.0～760.0V	0.1V	1%+40

DC Current Measurement

Function	Range	Measurement Range	Resolution	Accuracy
DCI	200uA	-220.00uA～220.00uA	0.01 uA	0.2%+10
	2000uA	-2200.0uA～2200.0uA	0.1 uA	0.2%+10
	20mA	-22.000mA～22.000mA	0.001mA	0.2%+10
	200mA	-220.00mA～220.00mA	0.01 mA	0.2%+10
	2A	-2.2000A～2.2000A	0.0001A	0.5%+10
	10A	-10.000A～10.000A	0.001A	0.5%+20

AC Current Measurement

Function	Range	Measurement Range	Resolution	Accuracy
ACI	200uA	0.00uA～220.00uA	0.01uA	0.8%+30
	2000uA	0.0uA～2200.0uA	0.1 uA	0.8%+30
	20mA	0.000mA～22.000mA	0.001mA	0.8%+30
	200mA	0.00mA～220.00mA	0.01 mA	0.8%+30
	2A	0.0000A～2.2000A	0.0001A	1.5%+20
	10A	0.000A～10.000A	0.001A	1.5%+20

DC + AC Current Measurement

Function	Range	Measurement Range	Resolution	Accuracy
ACI+DCI	200uA	0.00uA～220.00uA	0.01uA	0.8%+30
	2000uA	0.0uA～2200.0uA	0.1 uA	0.8%+30
	20mA	0.000mA～22.000mA	0.001mA	0.8%+30
	200mA	0.00mA～220.00mA	0.01 mA	0.8%+30
	2A	0.0000A～2.2000A	0.0001A	1.5%+20

Resistance Measurement

Function	Range	Measurement Range	Resolution	Accuracy
OHM	200Ω	0～220.00Ω	0.01Ω	0.2%+10
	2kΩ	0～2.2000kΩ	0.000lΩ	0.2%+5
	20kΩ	0～22.000kΩ	0.001kΩ	0.2%+5
	200kΩ	0～220.00kΩ	0.01 kΩ	0.5%+5
	2MΩ	0～2.2000MΩ	0.0001MΩ	0.6%+5
	20MΩ	0～22.000MΩ	0.001MΩ	1%+40
	60MΩ	0～60.00MΩ	0.01 MΩ	5%+20

Capacitance Measurement

Function	Range	Measurement Range	Resolution	Accuracy
CAP	10nF	0～11.00nF	0.01nF	5%+50
	100nF	0～110.0nF	0.1nF	5%+5
	1000nF	0～1100nF	1nF	5%+5
	10μF	0～11.00μF	0.01uF	5%+5
	100μF	0～110.0μF	0.1uF	5%+5
	1000μF	0～1100μF	1uF	5%+50
	10mF	0～11.00mF	0.01mF	5%+50
	100mF	0～110.0mF	0.1mF	5%+50

Frequency Count Accuracy

Function	Range	Measurement Range	Resolution	Accuracy
FREQ	10Hz	0～9.9999Hz	0.0001Hz	0.02%+4
	100Hz	0～99.999Hz	0.001Hz	0.02%+4
	1000Hz	0～999.99Hz	0.01Hz	0.02%+4
	10kHz	0～9.9999kHz	0.0001kHz	0.02%+4
	100kHz	0～99.999kHz	0.001kHz	0.02%+4
	1000kHz	0～999.99kHz	0.01kHz	0.02%+4
	10MHz	0～9.9999MHz	0.0001MHz	0.02%+4
DUTY		0.1%～99%	0.1%	1%
1. Reading will be 0.00 for signals below 3 Hz.				

Diode Function

Function	Range	Measurement Range	Resolution	Sensitivity
DIODE	2V		0.0001V	1%+10

Continuity Test

Function	Range	Measurement Range	Resolution	Sensitivity
Continuity Test	600Ω		0.1Ω	≤30ΩBB

TC Measurement

Function	Range	Resolution	Accuracy
K	-200.0°C～1372.0°C	0.1°C	0.5%+0.5°C
	-328.0°F～2501.6°F	0.1°F	0.5%+1°F
1. By using ITS-90 temperature scale . 2. The accuracy does not include the error of internal temperature compensation caused by a sensor.			

RTD Measurement

Function	Measurement Range	Resolution	Accuracy
Pt100	-200.0°C～800.0°C	0.1°C	
	-328.0°F～1472.0°F	0.1°F	
1. By using ITS-90 temperature scale 2. Attached lead resistance is excluded			

Peak Hold

Function	Accuracy	Response Time
	Wired/wireless Communication	
DCV、DCA	±100 counts	>500us

Burden Voltage

Function	Range	Burden Voltage
A	10.000A	0.04V/A
	2.0000A	0.04V/A
	200.00mA	1.8mV/mA
	200.00uA	103uV/uA
	2000.0uA	103uV/uA

Input Feature

Function	Input Impedance (nominal value)						
V	10MΩ，<100pF						
mV	>2.5GΩ						
	Common Mode Rejection Ratio				Normal Mode Rejection		
DCV、DCmV	100dB（dc to 50Hz / 60Hz/1KΩ）				60dB（50Hz / 60Hz）		
ACV、ACmV	60 dBm（dc to 50Hz / 60Hz/1KΩ）						
	Open Circuit Test Voltage			Full-scale Voltage			
ohm	2.5V			2.2V			
Diode	< 3.5V			2.2V			
Continuity	< 1V			500mV			
	Typical short-circuit current						
ohm	200Ω	2KΩ	20KΩ	200KΩ	2MΩ	20MΩ	60 MΩ
	0.8mA	0.2mA	20uA	2uA	0.2uA	<0.1uA	<0.1uA
Diode	0.2mA（Typical Value）						

Notes of the Manual

- The present operation instruction is subject to change without notice.
- The content of the operation instruction is regarded as correct. Whenever any user finds its mistakes, omission, etc., he or she is requested to contact the manufacturer.
- The Company is not liable for any accident and hazard arising from the customer misuse or inadvertent operation.
- The functions described in this operation instruction should not be used as grounds to apply this product to a particular purpose.