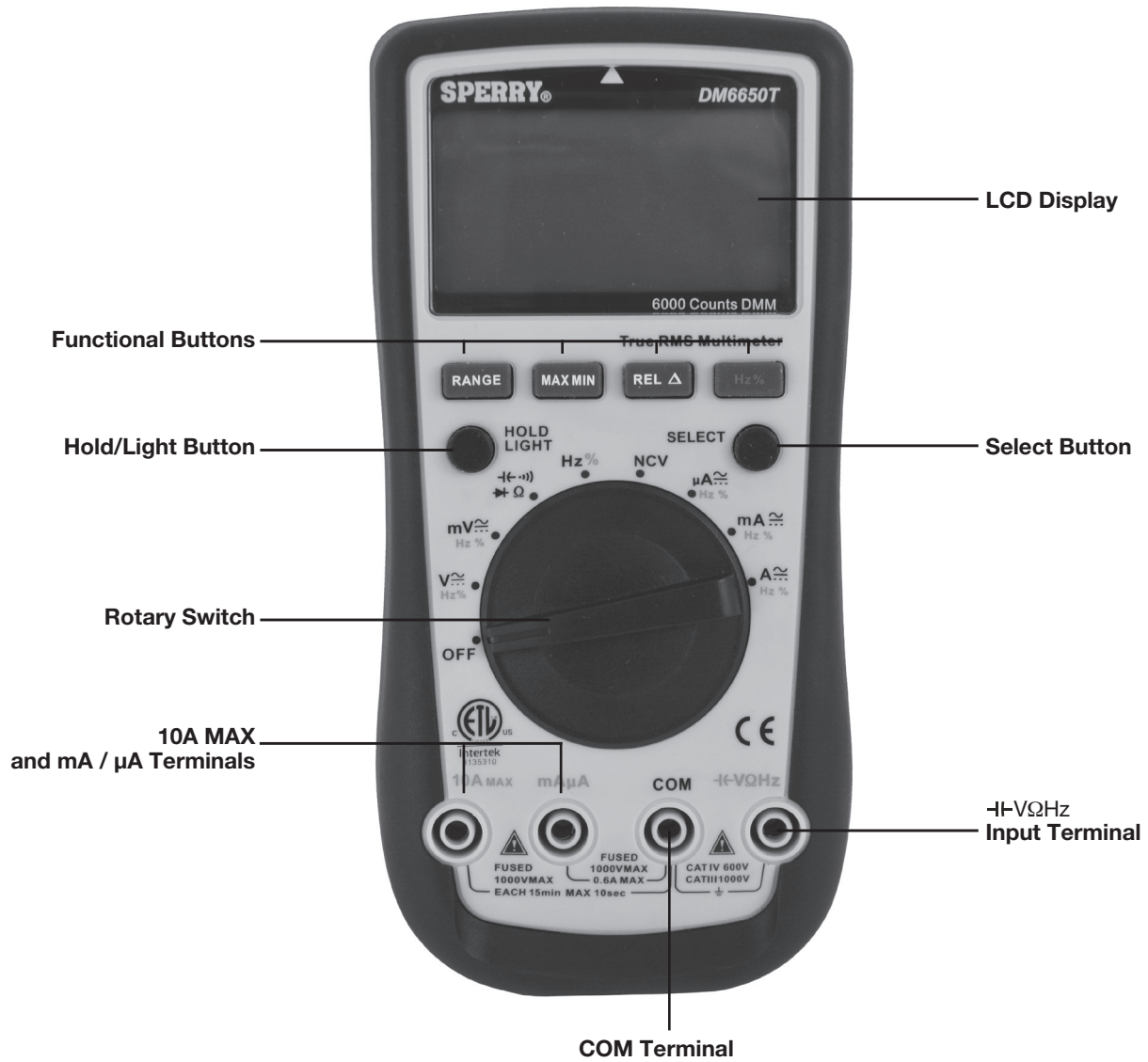


Read this owner's manual thoroughly before use and save.

Figure 1



I. DISPLAY FUNCTIONS & SYMBOLS

Rotary Switch

$mV \approx$	AC & DC Voltage	$\text{--} \text{--}$	Capacitance Test
$V \sim$	AC - Alternating Current	Hz%	Frequency and Duty Cycle Test
$V \text{---}$	DC - Direct Current	$mA \approx$	mA - Millamp
Ω	Ohm - Resistance	$10A \approx$	A - Amp
$\rightarrow +$	Diode Test	NCV	Non-Contact Voltage Sensing
$\bullet)$	Continuity Test	OFF	Power off

Functional Buttons


BUTTON	OPERATION PERFORMED
HOLD/LIGHT Button	Press and hold for 2 seconds to turn the display backlight on or off
HOLD/LIGHT Button	Press to step through the available functions
Select Button	Press to step through the available functions.
RANGE	<ul style="list-style-type: none"> • Press RANGE to enter the manual ranging mode; the Meter beeps • Press RANGE to step through the ranges available for the selected function; the Meter beeps • Press and hold RANGE for 2 seconds to return to autoranging; the Meter beeps
MAX/MIN	Press to select the maximum or minimum value. Press and hold to exit.
REL Δ	<ul style="list-style-type: none"> • Press to enter REL mode • Press again to exit REL mode

Display Symbols

	Data hold is active
	Sleep Mode
	Negative reading
AC	AC measurement
DC	DC measurement
AUTORANGE	Auto ranging mode
OL	The input value is too large for the selected range
	Test of diode
	The continuity buzzer is on.
MAX/MIN	Maximum and Minimum reading.
	The battery is low. 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 .
	Sensor test is in progress
	The REL is on to display the stored value minus the present value
Ω , k Ω ,M Ω	Ω : Ohm. The unit of resistance
	k Ω : kilohm. 1×10^3 or 1000 ohms
	M Ω : Megaohm. 1×10^6 or 1,000,000 ohms
mV,V	V: Volts. The unit of voltage
	mV: Millivolt. 1×10^{-3} or 0.001 volts.
μ A ,mA ,A	A: Amperes (amps). The unit of current
	mA: Milliamp. 1×10^{-3} or 0.001 amperes
	μ A : Microamp. 1×10^{-6} or 0.000001 amperes
nF, μ F,mF	F: Farad. The unit of capacitance
	μ F : Microfarad. 1×10^{-5} or 0.000001 farads.
	nF : Nanofarad. 1×10^{-9} or 0.000000001 farads.
Hz,kHz,MHz	Hz: Hertz. The unit of frequency in cycles/second.
	kHz: Kilohertz. 1×10^3 or 1,000 hertz.
	MHz: Megahertz. 1×10^6 or 1,000,000 hertz.
NCV	Non-Contact Voltage measurement

II. SAFETY WARNINGS

- This instruction manual contains warnings and safety rules which must be observed by the user to ensure safe operation of the instrument and retain it in safe condition.
- Read through and understand the instructions contained in this manual before using the instrument.
- Keep the manual at hand to enable quick reference whenever necessary.
- The instrument is to be used only in its intended applications.
- Understand and follow all the safety instructions contained in the manual.
- It is essential that all safety instructions are adhered to.
- Failure to follow the safety instructions may cause injury, instrument damage

The symbol  indicated on the instrument means that the user must refer to the related parts in the manual for safe operation of the instrument. It is essential to read the instructions wherever the symbol appears in the manual.



DANGER is reserved for conditions and actions that are likely to cause serious or fatal injury.



WARNING is reserved for conditions and actions that can cause serious or fatal injury.



CAUTION is reserved for conditions and actions that can cause injury or instrument damage.

DANGER

- Never make measurement on a circuit in which voltage over 1000V exists.
- Do not exceed the CAT rating of the measuring device
- Do not attempt to make measurement in the presence of flammable gases.
The use of the instrument may cause sparking, which can lead to an explosion.
- Never use the instrument if its surface or your hand is wet.
- Do not exceed the maximum allowable input of any measuring range.
- Never open the battery cover during a measurement.
- The instrument is to be used only in its intended applications or conditions.
Use in other than as intended may cause instrument damage or serious personal injury.

WARNING

- Never attempt to make any measurement if any abnormal conditions are noted, such as broken case, cracked test leads and exposed metal part.
- Do not turn the function selector switch with plugged in test leads connected to the circuit under test.
- Do not install substitute parts or make any modification to the instrument.
Return the instrument to your distributor for repair or recalibration.
- Do not try to replace the batteries if the surface of the instrument is wet.
- Always switch off the instrument before opening the battery compartment cover for battery replacement.











CAUTION

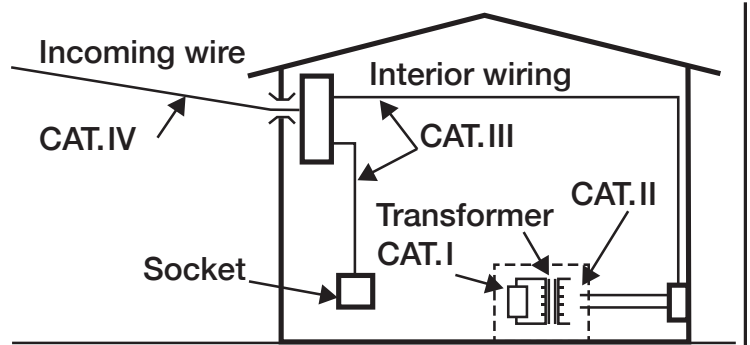
- Set the Function Switch to an appropriate position before starting measurement.
- Firmly insert the test leads.
- Disconnect the test leads from the instrument for current measurement.
- Do not expose the instrument to the direct sun, high temperature and humidity or dewfall.
- Be sure to power off the instrument after use. When the instrument will not be in use for a long period, place it in storage after removing the batteries.
- Use only a soft cloth dampened with water or neutral detergent for cleaning the meter.
Do not use abrasives, solvents or harsh chemicals. Allow to dry thoroughly before use.

Measurement categories (Over-voltage categories)






To ensure safe operation of measuring instruments, IEC61010 establishes safety standards for various electrical environments, specified as CAT I through CAT IV, and called measurement categories. Higher-numbered categories correspond to electrical environments with greater momentary energy, so a measuring instrument designed for CAT III environments can endure greater momentary energy than one designed for CAT II.

- CAT I: Secondary electrical circuits connected to an AC electrical outlet through a transformer or similar device.
- CAT II: Primary electrical circuits of equipment connected to an AC electrical outlet by a power cord.
- CAT III: Primary electrical circuits of the equipment connected directly to the distribution panel, and feeders from the distribution panel to outlets.
- CAT IV: The circuit from the service drop to the service entrance, and to the power meter and primary over current protection device (distribution panel).

Symbols	
	Caution, risk of danger, refer to the operating manual before use
	Caution, risk of electric shock
	AC (Alternating Current)
	DC (Direct current)
	AC/DC Selectable (Alternating Current/Direct Current)
	Earth (ground) Terminal
	The equipment is protected throughout by double insulation or reinforced insulation
	Application around and removal from hazardous live conductors is permitted.
	Conforms to Standards of European Union
	Designates the product as recyclable electronic waste per WEEE Directive



III. GENERAL SPECIFICATIONS

- Maximum Voltage between any Terminals and Grounding:
Refer to the different ranges input protection voltage ..
-  Fused Protection for mA / μ A Input Terminal: 600mA H 1000V \varnothing 6.35x31.8mm.
-  Fused Protection for 1 OA Input Terminal: 10A H 1000V \varnothing 10.3x38.1 mm.
- Display: Maximum reading 6000 (frequency 9999), analogue bar graph 61 segments.
- Measurement Speed: Updates 2-3 times/second.
- Range: Auto or Manual
- Polarity Display: Auto
- Overload indication: Display OL
- Battery Deficiency: Display 
- Temperature:
 - Operating: 0°C to +40°C (32°F to +104°F)
 - Storage: -10°C to +50°C (14°F to +122°F)
- Relative Humidity:
 - \leq 75% @ 0°C - 30°C below
 - \leq 50% @ 30°C~40°C
- Battery Type: One piece of 9V (NEDA1604 or 6F22 or 006P).
- Dimensions (HxWxL): (180 x 87 x 47)mm.
- Weight: Approximate 370g (battery included).
- Safety/Compliances:
EN 61010-1, EN 61010-2-030 CAT 1111000V, CAT IV 600V overvoltage and double insulation standard.
- Certifications:  
- Accuracy Specifications:
 - Accuracy \pm a% reading + b digits guarantee for 1 year.
 - Operating temperature 18°C~28°C
 - Relative Humidity <75%

IV. OPERATING INSTRUCTIONS

A. AC/DC VOLTAGE MEASUREMENT (See Figure 2)

To measure voltage, connect the Meter as follows:

1. Insert the red test lead into the **V Ω Hz** input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to **V $\overline{\sim}$** or **mV $\overline{\sim}$** ; DC measurement is default or press the **SELECT** button to switch show the AC and DC symbols.
3. Connect the test leads across with the object being measured.

The measured value shows on the display and will also show the TRMS value.

Display TRMS Value: If the frequency and duty cycle values are needed at this moment, press the **Hz** button to obtain relative data. The input amplitude concerning these two aspects should follow the requirements as stated below:

- Input Amplitude: (DC electric level is zero)
- Input Amplitude: $\geq \text{range} \times 30\%$
- Frequency response: $\leq 1\text{kHz}$

NOTE: In each range, the Meter has an input impedance of 10Ω except the mV range where the input impedance is $3000M\Omega$. This loading effect can cause measurement errors in high impedance circuits. If the circuit impedance is less than or equal to $10K\Omega$, the error is negligible (0.1 % or less).

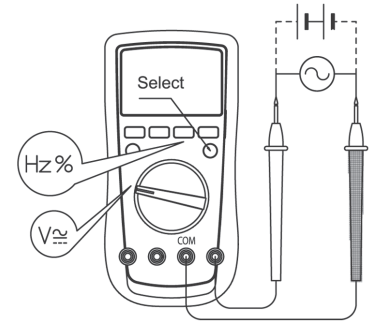


Figure 2

B. AC/DC CURRENT MEASUREMENT (See Figure 3)

To measure current, connect the Meter as follows:

1. Insert the red test lead into the **mA / μ A** or **10A Max** input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to **μ A**, **mA**, or **A**.
3. The Meter defaults to the DC current measurement mode. show the AC and DC symbols current measurement function, press the **SELECT** button.
4. Connect the test lead in series to the return circuit to be tested.
5. Press **Hz%** to obtain the frequency and duty cycle value.

Display TRMS Value: If the frequency and duty cycle values are needed, press the **Hz/%** button to obtain relative data. The input amplitude concerning these two aspects should follow the requirements as stated below:

- Input Amplitude: (DC electric level is zero)
- Input Amplitude: $\leq \text{range} \times 30\%$
- Frequency response: $\leq 1\text{kHz}$

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.
- Each measurement time for $>5\text{A}$ current 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, and remove the testing leads from the input terminals of the Meter.

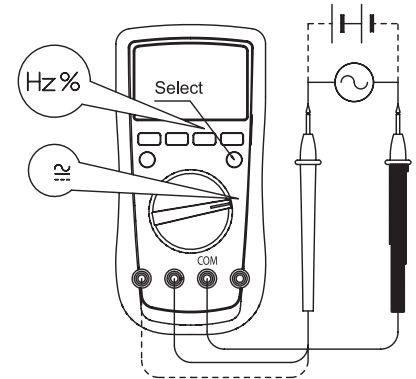


Figure 3

C. MEASURING RESISTANCE (See Figure 4)

To measure resistance, connect the Meter as follows:

1. Insert the red test lead into the **V Ω Hz** input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to Ω resistance measurement (Ω) is default or press the **SELECT** button to select Ω measurement mode.
3. Connect the test leads across with the object being measured. If there is lead on the resistor or SMT resistor. The measured value shows on the display.

NOTE:

- The test leads can add 0.2Ω to 0.5Ω of error to resistance measurements. To obtain precision readings in low-resistance measurement, short-circuit the input terminals beforehand and use the relative measurement function button **REL Δ** . This will automatically subtract the value measured when the testing leads are shortcircuited from the reading.
- If Ω reading with shorted test leads is not $\leq 0.5\Omega$, check for loose test leads or other reasons.
- For high-resistance measurements ($>1M\Omega$), it is normal to take several seconds to obtain a stable reading. To obtain stable reading, use shorter test leads to carry out readings.
- The LCD displays **OL** indicating open-circuit for the tested resistor or the resistor value is higher than the maximum range of the Meter.
- When the resistance measurement has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads from the input terminals of the Meter.

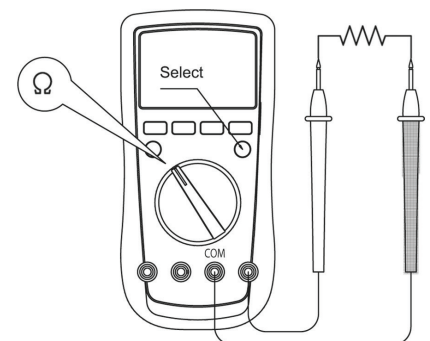


Figure 4

D. TESTING FOR CONTINUITY (See Figure 5)

To test for continuity, connect the Meter as follows:

1. Insert the red test lead into the $\text{H-V}\Omega\text{Hz}$ input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to Ω and press **SELECT** button to select the measurement mode.
3. The buzzer sounds continuously if the resistor to be tested is $<10\Omega$.
The buzzer does not sound if the resistor to be tested is $>35\Omega$.

NOTE:

- Open circuit voltage is around 0.45V
- When continuity testing has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads away from the input terminals of the Meter.

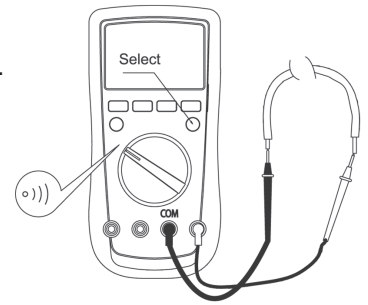


Figure 5

E. TESTING DIODES (See Figure 6)

To test diodes, connect the Meter as follows:

1. Insert the red test lead into the $\text{H-V}\Omega\text{Hz}$ input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to Ω and press the **SELECT** button to select $\rightarrow|$ measurement mode.

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 **OL** indicating diode being tested is open or polarity is reversed. The unit of diode is Volt (V), displaying that the forward voltage drop readings.
- When diode testing has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads from the input terminals of the Meter.

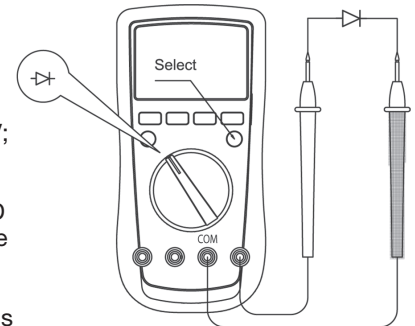


Figure 6

F. CAPACITANCE MEASUREMENT (See Figure 7)

To measure capacitance, connect the Meter as follows:

1. Insert the red test lead into the $\text{H-V}\Omega\text{Hz}$ input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to Ω and press **SELECT** button to select nF measurement mode.
 - At that time, the Meter will display a fixed value as below which is the Meter internal fixed distributed capacitance value. To ensure accuracy when measuring a small value of capacitance, the tested value must subtract this value, **REL** mode can help on that. Around 10nF
3. Connect the test leads across with the object being measured.
The measured value shows on the display.

NOTE:

- It takes a longer time when the tested capacitor is more than $100\mu\text{F}$
- The LCD displays **OL** indicating the tested capacitor is shorted or it exceeds the maximum range.
- When capacitance measurement has been completed, disconnect all connections between the test leads, capacitor and the Meter.

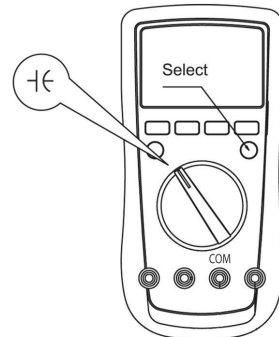


Figure 7

G. FREQUENCY MEASUREMENT (See Figure 7)

To measure frequency, connect the Meter as follows:

1. Insert the red test lead into the $\text{H-V}\Omega\text{Hz}$ input terminal and the black test lead into the **COM** terminal.
2. Set the rotary switch to **Hz%**; frequency measurement (Hz) is default or press **Hz%** button to select **Hz** measurement mode.
3. Connect the test leads across with the object being measured.
The measured value shows on the display.
4. If you need to measure duty cycle, press **Hz%** button to select % measurement mode

NOTE:

- Input Amplitude: (DC electric level is zero)
When 10Hz~10MHz: $200\text{mV} \leq a \leq 30\text{V}_{\text{rms}}$
- When frequency measurement has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads away from the input terminals of the Meter.

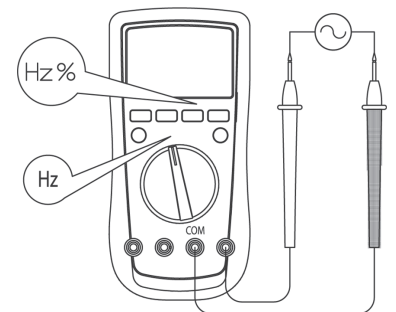


Figure 8

H. NCV (NON-CONTACT VOLTAGE)

To use the meter as a NCV (Non-Contact Voltage) Sensor, set it up as follows:

1. From the Off position, set the rotary switch to the **NCV**.
2. The meter will now function as a non-contact voltage sensor to indicate the presence of nearby AC voltage.
3. The meter will display a voltage reading when detecting the electric field of AC voltage while in NCV mode.


NOTE:

- The NCV sensor location is marked on the top of the meter by a Δ .

I. 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. The Hold mode is applicable to all measurement functions.

- Press **HOLD** to enter Hold mode; the Meter beeps.
- Press **HOLD** again to exit Hold mode; the Meter beeps.
- In Hold mode,  is displayed.

J. RANGE BUTTON

- Press **RANGE** to enter the manual ranging mode; the Meter beeps.
- Press **RANGE** to step through the ranges available for the selected function; the Meter beeps.
- Press and hold **RANGE** for over 2 seconds to return to autoranging; the Meter beeps.

NOTE:

- When using the manual range mode, always start from the highest range and work your way down through the ranges until you find the appropriate range.

K. MAX MIN BUTTON

- Press **MAX MIN** to start recording of maximum and minimum values. This sets the display to show high (MAX) and low (MIN) readings. The Meter enters the manual ranging mode after pressing **MAX MIN** button.
- Press and hold **MAX MIN** for over 2 seconds to exit the **MAX MIN** mode and return to the present measurement range.

L. RELATIVE VALUE MODE

The **REL** mode applies to all measurement functions except frequency/duty cycle measurements. It subtracts a stored value from the present measurement value and displays the result.

For instance, if the stored value is 20.0V and the present measurement value is 22.0V, the reading would be 2.0V. If a new measurement value is equal to the stored value then it will display 0.0V.

To enter or exit **REL** mode:

- Press **REL** Δ to enter **REL** mode, and the present measurement range is locked and display "0" as the stored value.
- Press **REL** Δ again to reset the stored value and exit **REL** mode.

M. SELECT BUTTON

Used for selecting the required measurement function when there is more than one function at one position of the rotary switch.

N. DISPLAY BACKLIGHT

- Press and hold the **HOLD/LIGHT** button for over 2 seconds to turn the Display Backlight on.
- The display backlight will automatically turn off around after 10 seconds.

O. AUTO POWER OFF

- To conserve battery life the meter powers off automatically after 15 minutes of non use.
- To disable Auto Off, press and hold the **SELECT** button while turning the rotary switch from the Off position when turning the meter on. Auto Off will be disabled until the next time the meter is turned off.

V. ACCURACY SPECIFICATIONS

DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
60mV	0.01mV	±(0.8%+3)
600mV	0.1mV	
6V	0.001V	±(0.5%+1)
60V	0.01V	
600V	0.1V	
1000V	1V	±(1.0%+3)

AC VOLTAGE

RANGE	RESOLUTION	ACCURACY	
60mV	0.01mV	±(1.2%+5)	±(2.0%+5)
600mV	0.1mV		
6V	0.001V	±(1.0%+3)	±(1.5%+5)
60V	0.01V		
600V	0.1V		
1000V	1V	±(1.2%+5)	±(3.0%+5)

- True RMS is applicable from 10% of range to 100% of range.
- AC crest factor can be up to 3.0 except 1000V where it is 1.5.
- A residual reading of 10 digits with test leads shorted, will not affect stated accuracy.

DC CURRENT

RANGE	RESOLUTION	ACCURACY
600µA	0.1µA	(1.0%+3)
6000µA	1µA	
60mA	0.01mA	
600mA	0.1mA	(1.2%+5)
6A	0.001A	
10A	0.01A	

- When ≥5A: Continuous measurement is allowed.
- When >5A: Continuous measurement less than 10 seconds at an interval more than 15 minutes.

FREQUENCY

RANGE	RESOLUTION	ACCURACY
10Hz~10MHz	0.01Hz	(0.1%+4)

- Overload Protection: 1000V DC/AC
- Input Amplitude: (DC electric level is zero)
- When measuring on line frequency or duty cycle under AC Voltage and Current measurement mode, the input amplitude and frequency response must satisfy the following requirement:
Input amplitude ≥ range x 30%
Frequency response: ≤1kHz

AC CURRENT

RANGE	RESOLUTION	ACCURACY
600µA	0.1µA	(1.2%+5)
6000µA	1µA	
60mA	0.01mA	(1.5%+5)
600mA	0.1mA	
6A	0.001A	(2.0%+5)
10A	0.01A	

- When ≥5A: Continuous measurement is allowed.
- When >5A: Continuous measurement less than 10 seconds at an interval more than 15 minutes.
- True RMS is applicable from 10% of range to 100% of range.
- AC crest factor can be up to 3.0 except 1000V where it is 1.5.
- A residual reading of 10 digits with test leads shorted, will not affect stated accuracy.

RESISTANCE

RANGE	RESOLUTION	ACCURACY
600Ω	0.1Ω	±(1.2%+2)
6kΩ	0.001kΩ	±(1.0%+2)
60kΩ	0.01kΩ	
600kΩ	0.1kΩ	
6MΩ	0.001MΩ	±(1.2%+2)
60MΩ	0.01MΩ	+(1.5%+2)

CAPACITANCE

RANGE	RESOLUTION	ACCURACY
40nF	0.01nF	±(3.0%+5)
400nF	0.1nF	
4µF	0.001µF	
40µF	0.01µF	±(4.0%+5)
400µF	0.1µF	
4000µF	1µF	unspecified

DIODE TEST

RESOLUTION	REMARKS	OVERLOAD PROTECTION
0.001V	Open circuit voltage around 2.8V	1000V DC/AC

CONTINUITY TEST

RESOLUTION	OVERLOAD PROTECTION
0.1Ω	1000V DC/AC

- Open circuit voltage is around 0.45V.
- Broken circuit resistance value is around > 350Ω, the buzzer does not beep.
- Good circuit resistance value is ≤10Ω on, the buzzer beeps continuously.

NON-CONTACT VOLTAGE DETECTION

RANGE	RESOLUTION	ACCURACY
50VAC	50Hz/60Hz	0mm: buzzer beep (insulated wire)
120VAC		0-5mm: buzzer beep (electric outlet)
500VAC		<12in: buzzer beep

VI. MAINTENANCE

A. Replacing the Battery (See Figure 12)

To replace the battery:

1. Turn the Meter's power off and remove all connections from the terminals.
2. Remove the screw from the tilt stand/battery compartment and separate the battery compartment and the tilt stand from the case bottom.
3. Remove the battery from the battery compartment.
4. Replace the battery with a new 9V battery (attached to the tilt stand).
5. Rejoin the tilt stand/battery compartment with the case bottom and reinstall the screw.

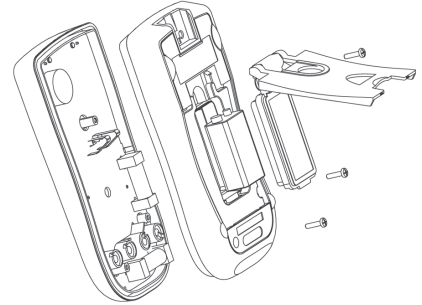


Figure 12

B. Testing the Meters Fuse (See Figure 13)

To test the meter's fuse connect the Meter as follows:

1. Insert the red test lead into the V input terminal.
2. Set the rotary switch to Ω resistance measurement (Ω) is default or press the **SELECT** button to select Ω measurement mode.
3. Insert the other end of the test lead into the 10A MAX and observe the reading on the display. You should see a reading <0.5 Ohms. If you see (OL), the fuse is bad.
4. Repeat step (4.) for the mA / μ A terminal.

NOTE:

- When the fuse test has been completed, disconnect the connection between the testing leads and the circuit under test, and remove the testing leads from the input terminals of the Meter.

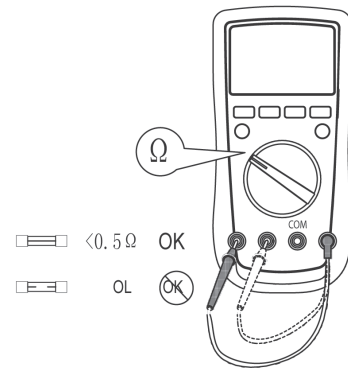


Figure 13

C. Replacing the Fuses (See Figure 13)

To replace the meter's fuse:

1. Turn the Meter power off and remove all the connections from the terminals.
2. Remove the screw from the tilt stand/battery compartment and separate the battery from the case bottom.
3. Remove the two 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 as follows and make sure the fuse is fixed firmly in the bracket.
 - mA / μ A range: F1, 600mA H 1000V, \varnothing 6.35x31.8mm
 - 10A range: F2, 10A H 1000V, \varnothing 10.3 x 38.1 mm
6. Rejoin the case bottom and case top, and reinstall the screw.
7. Rejoin the tilt stand/battery compartment and case bottom, and reinstall the screw.

SPERRY INSTRUMENTS LIMITED LIFETIME WARRANTY

Subject to the exclusions and limitations detailed below, Sperry Instruments provides a limited lifetime warranty on products of its manufacture will be free from defects in materials and workmanship under normal use and service.

Limited

Limited means that Sperry Instruments warrants to the original purchasers of products from Sperry Instruments authorized distributors at the time of shipment such products shall be free of defects in material and workmanship while the tool is used under normal working conditions. Standard wear and tear, dulling over time, overloading, misuse, and acts of God are not covered under warranty. This warranty does not cover batteries, fuses, or test leads.

When a warranty claim arises, the purchaser must contact Sperry Instruments. If the defect comes under the terms of this limited warranty, Sperry Instruments will arrange, at its sole discretion, one of the following options:

- Product will be replaced

The purchaser is solely responsible for determining the suitability of Sperry products for the purchaser's use or resale, or for incorporating them into articles or using them in the purchaser's applications. The distributor is authorized to extend the foregoing limited warranty to its original purchasers in connection with the sales of Sperry products, provided that such products shall not have been altered by the distributor. The distributor shall be fully responsible for any warranties the distributor makes to its purchasers which are broader or more extensive than Sperry's limited warranty.

Lifetime Warranty

Warranty Limitation: The foregoing warranties are exclusive and are in lieu of all other express and implied warranties whatsoever, including but not limited to implied warranties of merchantability and fitness for a particular purpose. The foregoing warranties do not cover ordinary wear and tear, abuse, misuse, overloading, alterations, products which have not been installed, operated or maintained in accordance with Sperry's written instructions. Test leads, fuses, batteries and calibration are not covered under any implied warranty. "Lifetime" of products that are no longer offered by Sperry will be either repaired or replaced with an item of Sperry Instruments choice of similar value. Lifetime is defined as 5 years after Sperry discontinued manufacturing the product, but the warranty period shall be at least ten years from date of purchase. Original proof of purchase is required to establish original ownership of product.

No warranty will be honored unless an invoice or other proof of purchase date is provided to Sperry Instruments. Hand written receipts or invoices will not be honored.

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- See more at: <https://www.sperryinstruments.com/en/Resources/Warranty-Information>

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