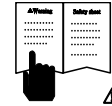
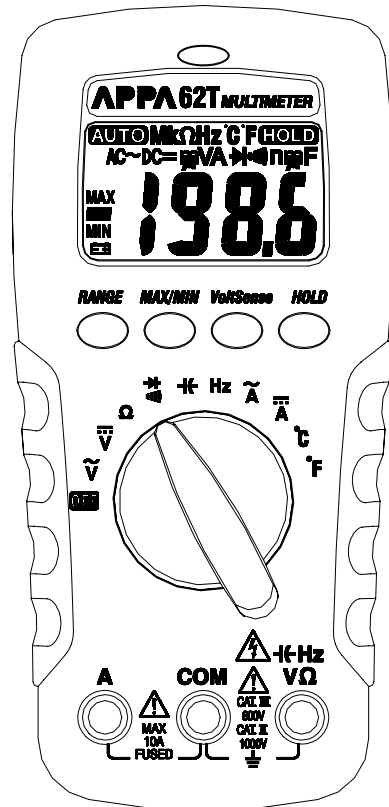


APPA 61/62/62T /62R
Digital Multimeter



Instruction
Card



Read First

Safety Information

Understand and follow operating instructions carefully. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

WARNING

- When using test leads or probes, keep your fingers behind the finger guards.
- Remove test lead from Meter before opening the battery door or Meter case.
- Use the Meter only as specified in this manual or the protection by the Meter might be impaired.
- Always use proper terminals, switch position, and range for measurements.
- Never attempt a voltage measurement with the test lead inserted into the A input terminal.
- Verify the Meter's operation by measuring a known voltage. If in doubt, have the Meter serviced.
- Do not apply more than the rated voltage, as marked on Meter, between terminals or between any terminal and earth ground.
- Do not attempt a current measurement when the open voltage is above the fuse protection rating. Suspected open circuit voltage can be checked with voltage function.
- Only replace the blown fuse with the proper rating as specified in this manual.
- Use caution with voltages above 30 Vac rms, 42 Vac peak, or 60 Vdc. These voltages pose a shock hazard.
- To avoid false readings that can lead to electric shock and injury, replace battery as soon as low battery indicator E appears.
- Disconnect circuit power and discharge all high-voltage capacitors before testing resistance, continuity, diodes, or capacitance.
- Do not use Meter around explosive gas or vapor.
- To reduce the risk of fire or electric shock do not expose this product to rain or moisture.

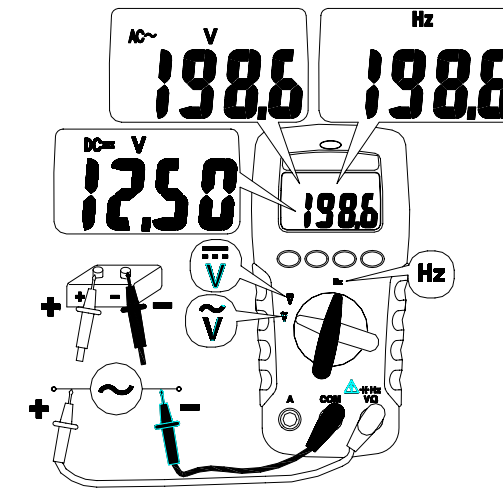
Caution

- Disconnect the test leads from the test points before changing the position of the function rotary switch.
- Never connect a source of voltage with the function rotary switch in Ω / Hz / Hz / \sim A / Hz position.
- Do not expose Meter to extremes in temperature or high humidity.
- Never set the meter in \sim A function to measure the voltage of a power supply circuit in equipment that could result in damage the meter and the equipment under test.

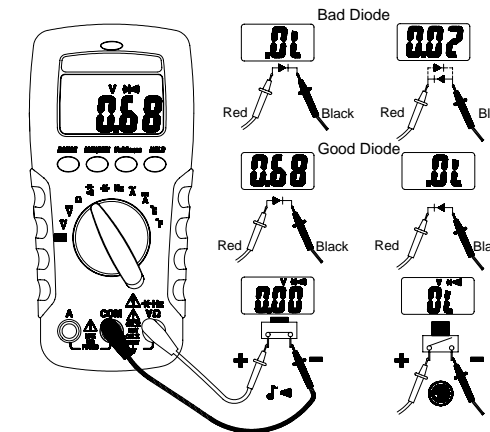
Symbols as marked on the meter and Instruction card

Δ	Risk of electric shock
Δ	See instruction card
---	DC measurement
\square	Equipment protected by double or reinforced insulation
E	Battery
---	Fuse
---	Earth
\sim	AC measurement
CE	Conforms to EU directives

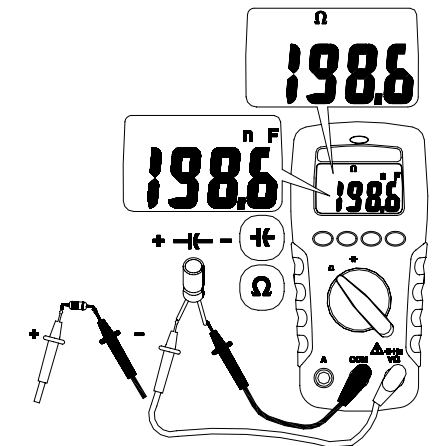
Measuring AC/DC Voltage And Frequency



Testing for Continuity and Diode



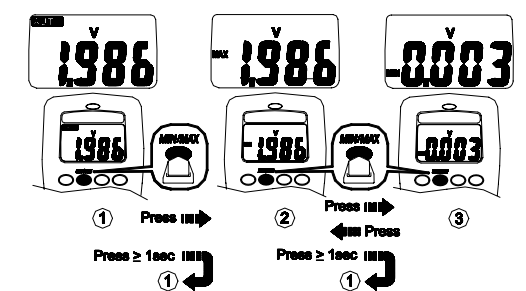
Resistance and Capacitance
(Capacitance for 62, 62T, 62R only)



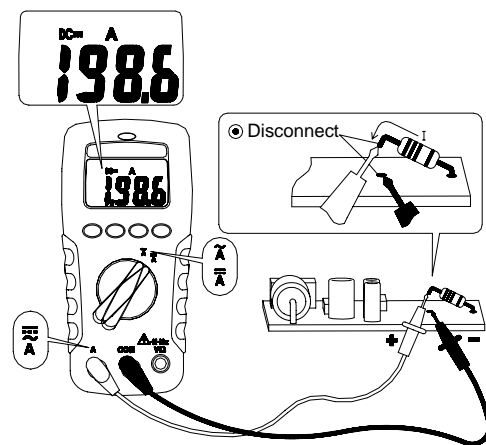
Note– To improve the measurement accuracy of small value capacitor, record the reading with the test leads open then subtract the residual capacitance of the Meter and leads from measurement.

$$C_{\text{UNKNOWN}} = C_{\text{MEASUREMENT}} - C_{\text{RESIDUAL}}$$

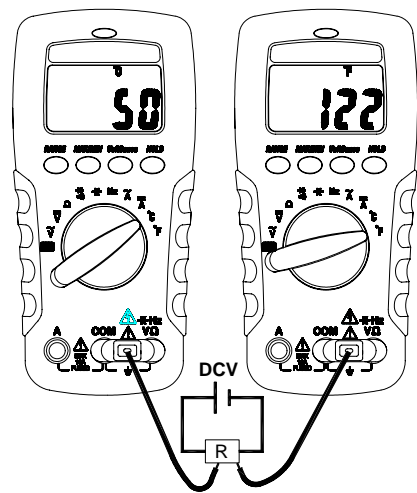
MIN MAX Record (For 62, 62T, 62R only)



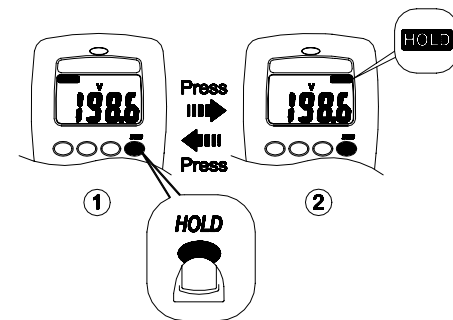
Measuring DC / AC Current
(For 62, 62T, 62R only)



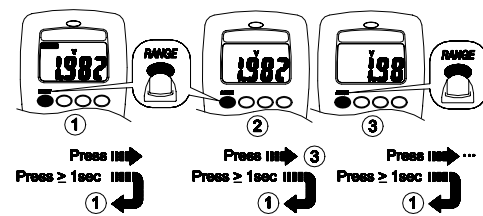
Temperature °C, °F



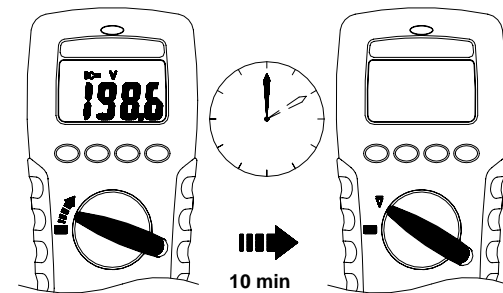
Display Hold



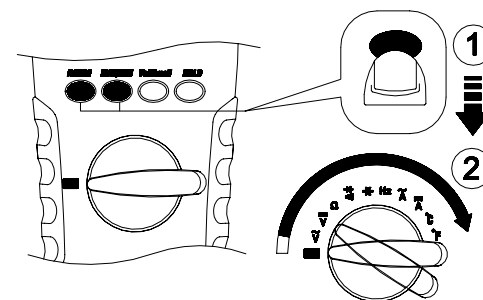
Manual Ranging and Auto Ranging



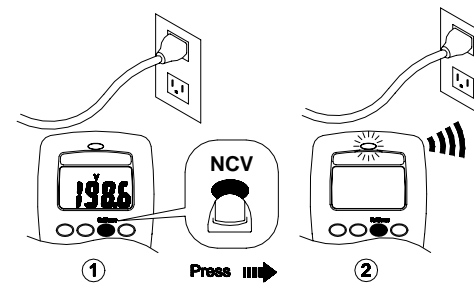
Auto Power Off (Battery Saver)



Disable Auto Power Off



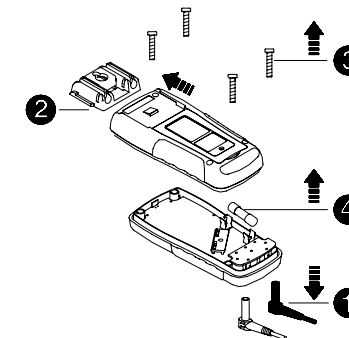
Non-Contact Voltage (Volt sense)



1. Volt sense switch will be activated on any function or at OFF status.
2. Test leads are not used for the Volt sense test.
3. Press the Volt sense button. The display goes black, a tone sounds and the red LED lights up to verify the instrument is operational. The Volt sense button must be held down to detect the presence of voltage without use of the leads.

Fuse Replacement (For 62, 62T, 62R only)

Refer to the following figure to replace fuse :

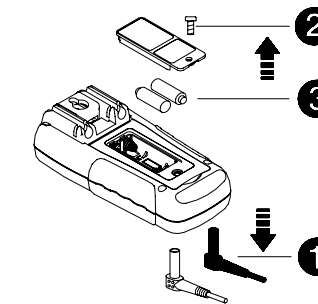


Caution

- Use only a fuse with the amperage, interrupt, voltage, and speed rating specified.
- Fuse rating : 10A, 500V

Battery Replacement

Refer to the following figure to replace the batteries :



Caution

- Replace the batteries as soon as the low batteries indicator "⚡" appears, to avoid false reading.
- Batteries 1.5V x 2

Maintenance

Do not attempt to repair this Meter. It contains no user-serviceable parts. Repair or servicing should only be performed by qualified personnel.

Cleaning

Periodically wipe the case with a dry cloth and detergent. Do not use abrasives or solvents.

Specifications

General Specifications

- Display** : 2000 counts.
- Polarity Indication** : Automatic, positive implied, negative indicated.
- Overrange Indication** : "OL" or "-OL".
- Batteries Life** : Alkaline 250 hours
- Low Batteries Indication** : "⚡" is displayed when the batteries voltage drops below operating voltage.
- Auto Power Off** : Approx 10 minutes.

Operating Ambient : Non-condensing $\leq 50^{\circ}\text{F}$,

$51.8^{\circ}\text{F} \sim 86^{\circ}\text{F}$ ($\leq 80\%$ R.H) $87.8^{\circ}\text{F} \sim 104^{\circ}\text{F}$ ($\leq 75\%$ R.H),

$105.8^{\circ}\text{F} \sim 122^{\circ}\text{F}$ ($\leq 45\%$ R.H)

Storage Temperature : -4°F to 140°F , 0 to 80% R.H. when battery removed from Meter.

Temperature Coefficient :

$0.15 \times (\text{Spec. Accy}) / ^{\circ}\text{F}$, $< 64.4^{\circ}\text{F}$ or $> 82.4^{\circ}\text{F}$.

Power Requirements :

1.5V x 2 IEC LR03, AM4 or AAA size

Dimensions (W x H x D) : 74mm x 156mm x 44mm

Accessories : Battery (installed), Test leads and user manual.

Measure : Samples 2 times per second nominal.

Altitude : 6561.7 ft (2000m)

Safety : Complies with EN61010-1, UL61010-1, IEC 61010-1, CAT.III. 600V, CAT.II. 1000V.

Weight : (320g) including battery.

Electrical Specifications

Accuracy is \pm (% reading + number of digits) at 23°C \pm 5°C < 80%RH.

DC / AC Volts

Range	AC Accuracy
200.0mV *	Unspecified
2.000V *	\pm (1.5%+5dgt) 50Hz ~ 300Hz
20.00V ~ 200.0V *	\pm (1.5%+5dgt) 50Hz ~ 500Hz *
750V AC / 1000V DC	

DC Accuracy : \pm (0.5% + 2dgt)

Over voltage protection : 1000V DC or 750 V ACrms.

Input Impedance : 10M Ω // less than 100pF.

* **CMRR / NMRR : (Common Mode Rejection Ratio) (Normal Mode Rejection Ratio)**

V_{AC} : CMRR > 60dB at DC, 50Hz / 60Hz

V_{DC} : CMRR > 100dB at DC, 50Hz / 60Hz

NMRR > 50dB at DC, 50Hz / 60Hz

AC Conversion Type :

Average sensing rms indication.

AC conversions are ac-coupled, true rms responding, calibrated to the sine wave input.

* The minimum LCD reading is 1400 count in Auto Ranging Mode.

Crest Factor : C.F. = Peak / Rms

+ 1.5% addition error for C.F. from 1.4 to 3

+ 3% addition error for C.F. from 3 to 4

DC / AC Current (For 62, 62T, 62R only)

Range	DC Accuracy	AC Accuracy	Voltage Burden
2.000A	\pm (1.0% + 3 dgt)	\pm (1.5% + 5 dgt)	2V max
10.00A **		50Hz ~ 500Hz *	

Overload Protection :

A input : 10A (500V) fast blow fuse

* **AC Conversion Type** : Conversion type and additional specification are same as DC/AC Voltage.

** **Maximum input current restriction time** : 10 minutes.

Resistance


Range	Accuracy	Voltage Burden
200.0 ~ 200.0K Ω **	\pm (0.7% + 3 dgt)	2V max
2.000M Ω **	\pm (1.0% + 3 dgt)	
20.00M Ω *	\pm (1.5% + 3 dgt)	

Open circuit Voltage : -1.3V approx.

* <100 dgt rolling.

** The minimum LCD reading is 1400 count in Auto Ranging Mode.

Diode Check and Continuity

Range	Resolution	Accuracy
	10 mV	\pm (1.5% + 5 dgt)*

* For 0.4V ~ 0.8V

Max. Test Current : 1.5mA

Max. Open Circuit Voltage : 2V

Overload Protection : 600V rms.

Frequency (For 62, 62T, 62R only)

Range	Sensitivity	Accuracy
2000Hz ~ 200.0KHz	>1.5 Vac rms, <5 Vac rms	Frequency : 0.01% \pm 1digit
2.000MHz ~ 20.00MHz	>2 Vac rms, <5 Vac rms	

Overload Protection : 600V rms.

Minimum pulse width : >25 ns

Duty cycle limits : >30% and <70%

Capacitance (For 62, 62T, 62R only)

Range	Accuracy	Overload Protection
2.000nF ~ 200.0 μ F	\pm (1.9% + 8 dgt)	600V rms
2.000mF *		

* < 10 dgt of reading rolling.

Temperature (°C) (For 62T only)

Temperature	Accuracy	Overload Protection
-20°C ~ 0°C	\pm (2% + 4 C)	600V rms
1°C ~ 100°C	\pm (1% + 3°C)	
101°C ~ 500°C	\pm (2% + 3°C)	
501°C ~ 800°C	\pm (3% + 2°C)	

Temperature (°F) (For 62T only)

Temperature	Accuracy	Overload Protection
-4°F ~ 32°F	\pm (2% + 8°F)	600V rms
33°F ~ 212°F	\pm (1% + 6°F)	
213°F ~ 932°F	\pm (2% + 6°F)	
933°F ~ 1472°F	\pm (3% + 4°F)	

Limited Warranty

This thermometer is warranted to the original purchaser against defects in material and workmanship for 1 year from the date of purchase. During this warranty period, manufacturer will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction. This warranty does not cover disposable batteries, or damage from abuse, neglect, accident, unauthorized repair, alteration, contamination, or abnormal conditions of operation or handling.

Any implied warranties arising out of the sale of this product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. The manufacturer shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expense or economic loss. Some states or countries laws vary, so the above limitations or exclusions may not apply to you.

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