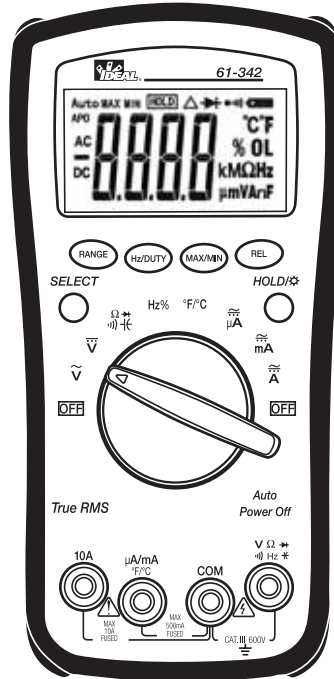




#61-340
#61-342

Digital Multimeter
Instruction Manual



Read First: Safety Information
Understand and follow operating instructions carefully. If this tester is not used in a manner specified by IDEAL, protection provided by the product may be impaired.

WARNINGS

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

- Do not use if meter appears damaged.
- Visually inspect the meter to ensure case is not cracked and back case is securely in place.
- Inspect and replace leads if insulation is damaged, metal is exposed, or probes are cracked. Pay particular attention to the insulation surrounding the connector.
- Do not use meter if it operates abnormally as protection may be impaired.
- Do not use during electrical storms or in wet weather.
- Do not use around explosive gas, dust, or vapor.
- Do not apply more than the rated voltage to the meter.
- Do not use without the battery and the back case properly installed.
- Remove the test leads from the meter before removing battery cap.
- Do not attempt to repair this unit as it has no user-serviceable parts.
- Disconnect power and discharge capacitors before testing resistance, continuity, diodes, capacitance or temperature.
- Replace battery as soon as low battery indicator appears to avoid false readings.
- Use the proper terminals, function and range for your measurements.
- Comply with local and national safety requirements, including the use of appropriate personal protective equipment.

CAUTION:

- To protect yourself, think "Safety First":
- Voltages exceeding 30VAC or 60VDC pose a shock hazard so use caution.
 - Use appropriate personal protective equipment such as safety glasses, face shields, insulating gloves, insulating boots, and/or insulating mats.

- Before each use:
 - Perform a continuity test by touching the test leads together to verify the functionality of the battery and test leads.
 - Use the 3 Point Safety Method. (1) Verify meter operation by measuring a known voltage. (2) Apply meter to circuit under test. (3) Return to the known live voltage again to ensure proper operation.
- Never ground yourself when taking electrical measurements.
- Connect the black common lead to ground or neutral before applying the red test lead to potential voltage. Disconnect the red test lead from the voltage first.
- Always work with a partner.
- When using the probes, keep fingers as far behind the probe tips as possible.

Symbols

	Risk of electric shock
	See instruction card
	DC measurement
	Equipment protected by double or reinforced insulation
	Battery
	Earth
	AC measurement
	Conforms to EU directives

Ranges & Accuracies:

AC Converter: 61-340 model is averaging sensing, rms calibrated; 61-342 model is true rms sensing.

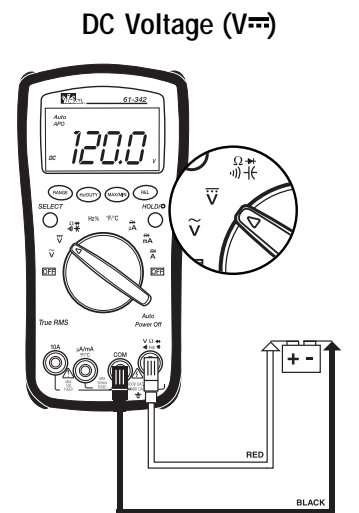
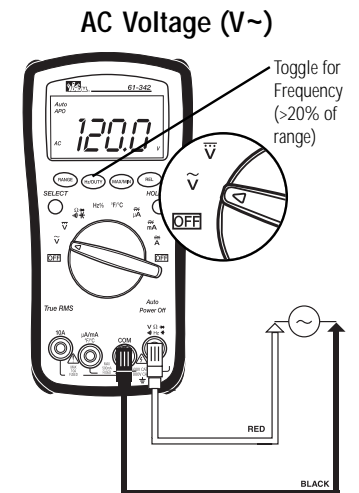
Accuracy: Accuracy is specified as +/- (a percentage of the reading + a fixed amount) at 23°C ± 5°C (73.4°F ± 9°F), less than 75% relative humidity.

Temperature Coefficient: 0.1 times the applicable accuracy specification from 32°F to 64°F and 82°F to 122°F (0°C to 18°C ; 28°C to 50°C).

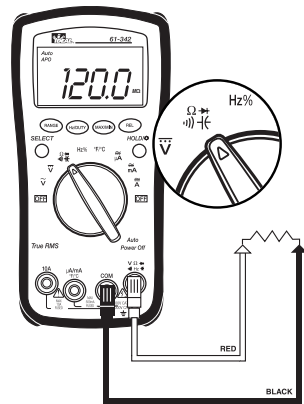
Ranges & Accuracies

Function	Range & Resolution	Accuracy	Overload Protection
DC Voltage	400.0m/4.000/40.00/400.0 V	±(0.5%+5)	900VDC 750VAC rms
	600.0V	±(1.0%+3)	
AC Voltage (40-400Hz)	400.0m/4.000/40.00/400.0/600 V	±(1.5%+5)	500mA/600V Fast Fuse 10A/1000V Fast Fuse
	400.0/4000.0 mA	±(1.5%+5)	
DC Current	4.000/10.00 A	±(1.5%+5)	500mA/600V Fast Fuse 10A/1000V Fast Fuse
	400.0/4000.0 µA	±(1.5%+5)	
AC Current (40-400Hz)	40.00/400.0 mA	±(2.0%+5)	600V DC/AC rms
	4.000/10.00 A	±(2.5%+5)	
Resistance	400.0Ω	±(1.2%+5)	600V DC/AC rms
	4.000k/40.00k/400.0k Ω	±(1.0%+2)	
Capacitance*	4.000MΩ	±(1.2%+2)	600V DC/AC rms
	40.00MΩ	±(2.0%+5)	
Frequency	400.0nF	±(3.0%+10)	600V DC/AC rms
	400.0m/4.000µ/40.00µ F	±(3.0%+5)	
Duty Cycle	400.0p/4000p F	±(20%+5)	600V DC/AC rms
	10.00/100.0/1.000k/10.00k/100.0k/1.000M/10.00M Hz	±(0.1%+3)	
Diode Check	0.1 - 99.9%	Sensitivity: ≤1MHz: 0.7Vrms ; >1MHz: 5Vrms	600V DC/AC rms
Continuity	Test current : (1±0.6) mA and then open circuit voltage is 2.5VDC typical.	±(2.5%+5) (<10kHz)	600V DC/AC rms
Temperature**	The beeper turns on <25Ω and turns off at >120Ω. -58-1500°F -50-800°C	±(3.0%+5) ±(3.0%+3)	600V DC/AC rms

*Accuracy not available for <10nF capacitance. **Accuracy is stated for meter only. Thermocouple accuracy adds another ±2.5% to reading. Input Impedance : 10MΩ for VAC & VDC. CF > 2, add ±1.0% to accuracy.

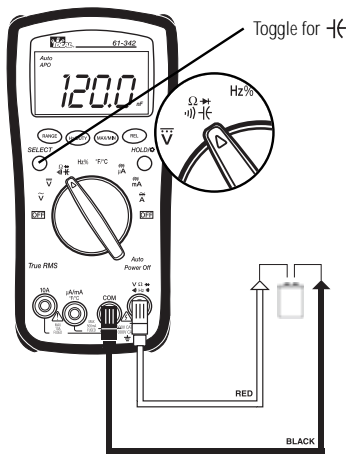


Resistance (Ω)



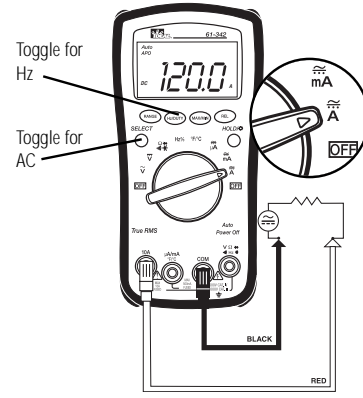
WARNING: De-energize circuit before taking resistance measurement.

Capacitance (μF)



WARNING: De-energize circuit and discharge capacitor before taking capacitance measurement.
Measuring time: < 15sec for <400 μF
< 1min for <4000 μF

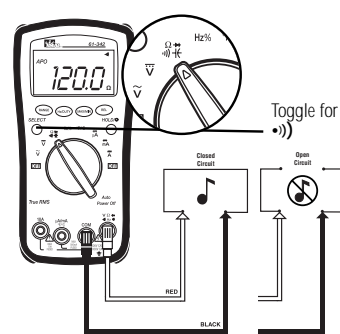
AC/DC Current (A)



Turn power off, break circuit, insert meter in series, then turn power back on.

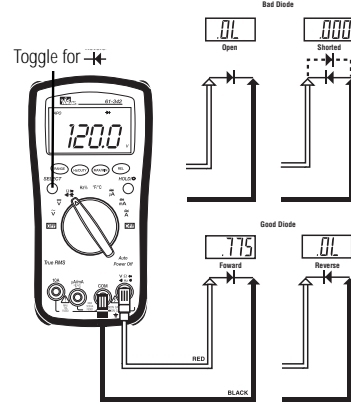
- WARNINGS:**
- Check fuse for continuity before testing.
 - Use the proper switch position and lead inputs.
 - Never attempt to measure current on circuits or equipment with more than 600 volts potential.
 - Duty cycle: 15sec ON / 15min OFF for 10A MAX

Audible Continuity (di)



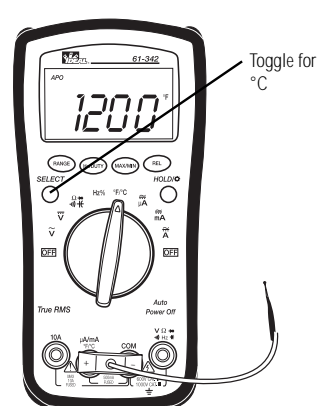
WARNING: De-energize circuit first.

Diode Test (\rightarrow)



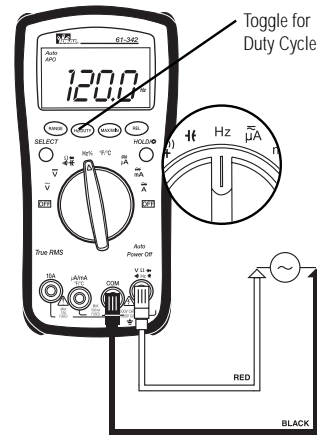
WARNING: De-energize circuit before checking diode.

Temperature



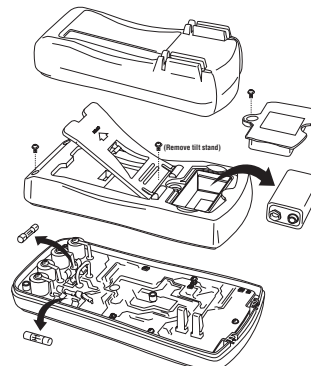
WARNING: To avoid electric shock, do not place test leads or thermocouple on a voltage source.

Frequency (Hz) / Duty Cycle(%)



Note: On noisy circuits, turn dial to \bar{V} , then toggle Hz button.

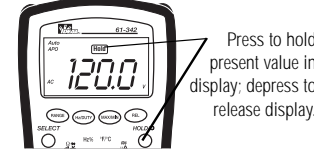
Battery & Fuse Replacement



WARNING: To avoid electric shock, disconnect test leads before removing battery cover.

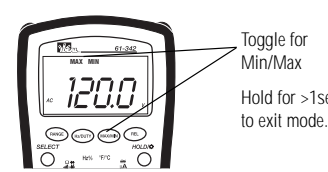
WARNING: For continued protection against fire, replace only with fuses of the specified voltage, current and rupture speed ratings.

Data Hold



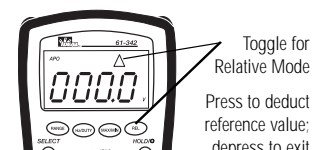
Press to hold present value in display; depress to release display.

Min/Max



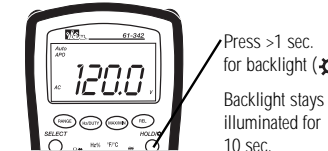
Toggle for Min/Max
Hold for >1sec. to exit mode.

Relative Mode



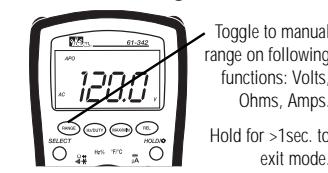
Toggle for Relative Mode
Press to deduct reference value; depress to exit mode.

Backlight



Press >1 sec. for backlight
Backlight stays illuminated for 10 sec.

Range



Toggle to manual range on following functions: Volts, Ohms, Amps.
Hold for >1sec. to exit mode.

Specifications

General Features
Display: 3999 Count LCD / 3-3/4 Digit 2.5x/sec.
Refresh Rate: Automatic (no indication for positive polarity); Minus(-) sign for negative polarity
Over range: "OL" is displayed
Polarity: Automatic (no indication for positive polarity); Minus(-) sign for negative polarity

True-RMS: 61-342 only.
Auto Power Off: After 10 minutes of non-use
Low Battery: "LO" is displayed if battery voltage drops below operating voltage 6561.7 ft. (2000m)
Altitude: Stated accuracy at 73° ±41°F (23° ±5°C), < 75% R.H.
Batteries: 9VDC NEDA 1604
Battery Life: 200 hrs. (61-340)
 150 hrs. (61-342)
Fuse: 0.5A/500V (#F-340)
 10A/1000V (#F-341)
 32° to 104°F (0° to 40°C)

Operating environment: at < 75% R.H.
Storage environment: -4° to 140°F (-20° to 60°C)
Weight: at < 80% R.H.
 13.6 oz (386g)
Size: 7.0"H x 3.5"W x 1.9"D (177mmHx89mmWx48mmD)
Accessories Included: Test leads (TL-310), 9V battery, Operating Instructions
Safety Certification: Complies with UL/IEC/EN 61010-1, 61010-031, Cat III-600V

UL **CE** **N12966**

Equipment protected by double insulation.
 Instrument has been evaluated and complies with insulation category III (overvoltage category III) for measurements performed in the building installation. Pollution degree 2 in accordance with IEC-644. Indoor use.

State laws vary, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Maintenance

Clean the case with a damp cloth and mild detergent. Do not use abrasives or solvents.

Service and Replacement Parts

No user-serviceable parts.

For replacement parts or to inquire about service information contact IDEAL INDUSTRIES, INC. at 1-877-201-9005 or visit our website @ www.testersandmeters.com.

Warranty Statement

This tester is warranted to the original purchaser against defects in material and workmanship for two years from the date of purchase. During this warranty period, IDEAL INDUSTRIES, INC. will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction.

This warranty does not cover fuses, batteries or damage from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

Any implied warranties arising out of the sale of an IDEAL 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, expenses or economic loss.

State laws vary, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.