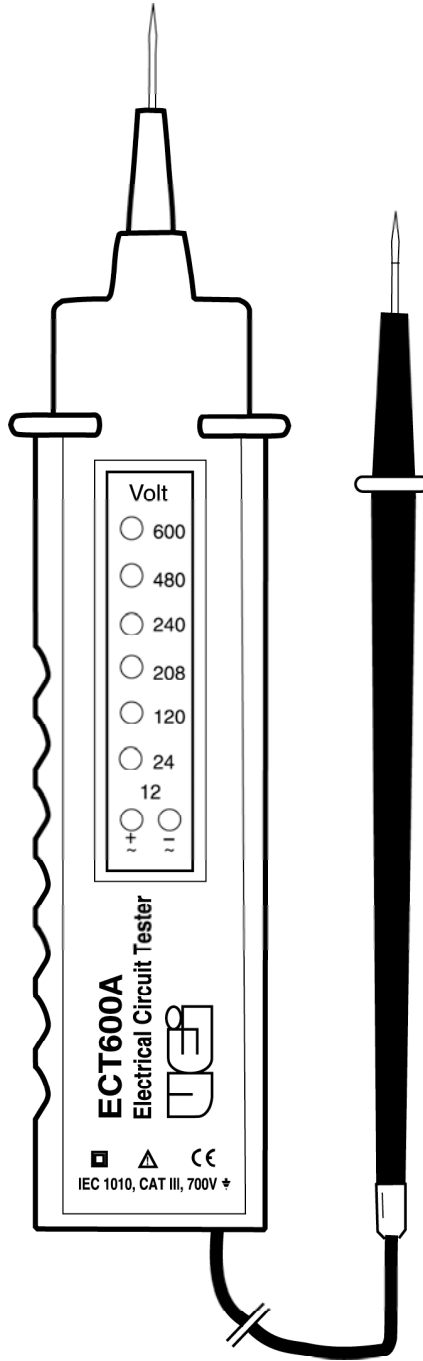




INSTRUCTION MANUAL

ECT600A

Electrical Circuit Tester



1-800-547-5740 • Fax: (503) 643-6322
www.ueitest.com • email: info@ueitest.com

Introduction

The ECT600A detects both voltage and continuity. The bright panel of Light Emitting Diode (LED) indicators provides a quick and sure display of measured voltage, ranging from 12 to 600 volts AC or DC. A loud, clear audio tone sounds to give you a quick indication that voltage or continuity is present even if you can't see the display.

The continuity feature sounds at a distinctive tone when the ECT600A finds a path for current to flow between two wires or other probed points.

With no batteries to replace, your ECT600A is ready to go when you are.

Features include

- Quick single-probe AC checks
- LED indication of voltage level
- Loud audible tone
- Continuity tester
- AC and DC voltage measurement
- No battery needed

Safety Notes











Before using this meter, read all safety information carefully. In this manual the word "**WARNING**" is used to indicate conditions or actions that may pose physical hazards to the user. The word "**CAUTION**" is used to indicate conditions or actions that may damage this instrument.

WARNING!

Exceeding the specified limits of this meter is dangerous and can expose the user to serious or possibly fatal injury.

- Read the safety precautions associated with the equipment being tested and seek assistance or advice when performing unfamiliar tasks.
- Keep your fingers away from the test lead metal probe contacts and bus-bars when making measurements. Always grip the instrument and test-lead behind the hand guards (molded into the probe).
- In the event of electrical shock, ALWAYS bring the victim to the emergency room for evaluation, regardless of the victim's apparent recovery. Electrical shock can cause an unstable heart rhythm that may need medical attention.

International Symbols

| | |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|  Dangerous Voltage |  Ground |
|  AC Alternating Current |  Warning or Caution |
|  DC Direct Current |  Double Insulation (Protection Class II) |
|  Either AC or DC |  Fuse |
|  Not Applicable to Identified Model |  Battery |

Controls and Indicators



DANGER!

DO NOT exceed 700 volts AC or DC. Exceeding this value may result in serious injury or equipment damage!



DANGER!

Voltage measured from phase to phase may be much higher than the specified voltage. Some multi-phase systems are specified relative to the voltage measured from ground to a single phase.



DANGER!

DO NOT remove the ECT600A from its protective boot or use when wet. The boot provides insulation from measured voltage. Moisture reduces insulation's properties.

WARNING!

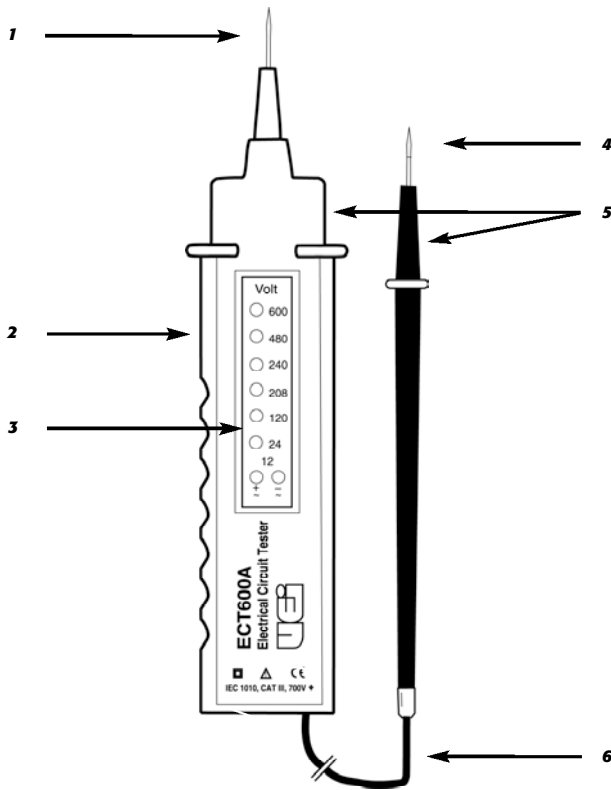
*Inspect this instrument prior to use for cracks or damage to the housing, frayed or cut insulation, modification, or any other discrepancy to the unit. **DO NOT** use your ECT600A if any of these conditions exist! Replace the instrument or have it repaired at a qualified facility.*

WARNING!

*Probe tips are extremely sharp! Store and transport this instrument in a manner that reduces risk of contact with the probes tips. **DO NOT** attempt to catch the unit if it is dropped.*

Verify your instrument is functioning properly: Each time you use your ECT600A, verify it is functioning properly by following the instructions below on a known good voltage source. This is particularly important when using this instrument to ensure wiring is safe to touch.

1. **Positive Probe**
2. **Instrument Body**
3. **Voltage Indicator Panel**
4. **Negative Probe**
5. **Probe Guards**
6. **Test Leads**



Instructions

Measuring Voltage

1. Remove the test lead from the storage clip on the back of the instrument.
2. Place the test lead probe on one side of the circuit (i.e. ground or neutral circuit).
3. Place the probe attached to the body on the other side of the circuit (i.e. the hot circuit).
4. Observe indicated voltage and polarity (if applicable) on the LED display.

NOTE: The current surge produced when initially charging or testing with this instrument may cause low amperage breakers and ground-fault-isolation breakers to trip.

This does not indicate a problem with the instrument. To avoid tripping a breaker, initially charge this instrument on a circuit with a 20 amp or more breaker, without ground-fault isolation.

Your ECT600A will test both AC and DC voltage, ranging from approximately 12 to 600 volts.

When AC voltage (up to 60 cycles) is detected, both of the bottom two LEDs will light while a warbling audible tone sounds. When working with both probes on AC voltage, the probes can be used on either the hot wire or the return wire, without regard to polarity.

When DC voltage is detected only one of the bottom two LEDs will light. That light corresponds to the polarity of the voltage at the probes. The probe attached to the body of the instrument is the positive probe and the probe at the end of the black test lead is the negative or "ground" probe.

Single Probe Quick Tests On Hot-Wires

Allow your instrument's internal power supply to charge by testing for voltage, leaving the unit exposed to the AC signal source for at least 5 seconds.

After the unit is fully charged, you can detect AC voltages in excess of 100 volts by simply placing the body's test probe in contact with a live AC wire (without connecting the test lead probe). When contact is made with a live wire, an audible tone will sound but no LED indicators will light. This method is not recommended for determining that a wire is safe to touch. If there is no reasonable option, be sure to verify the unit is working as expected on a known voltage source.

Charging The Instrument

Allow your instrument's internal power supply to charge by following the procedures documented in "MEASURING VOLTAGE" steps 1 through 4, leaving the unit exposed to a voltage source (100 to 700 volts) for at least 5 seconds.

Typically the instrument will retain its charge for at least 30 minutes without being used, and will sustain the continuity tone for more than one minute if recently charged.

Charging is required for all audio tone dependent functions.

Testing For Continuity

Continuity indicates that current can flow from one point to another. Your ECT600A will sound a tone when it senses less than approximately 900 K Ohms between the two test probes. Although the volume and frequency of this tone changes slightly with resistance, the instrument cannot "measure" resistance. UEi makes numerous Digital Multimeters for this purpose.

1. Charge your instrument by placing the test probes in a wall outlet for approximately 5 seconds.
2. Place the test probes at opposite ends of the circuit to be tested. Ensure the probes are making good contact.
3. An audio tone sounds if a signal (voltage and current) can pass between the two probed units.

CAUTION!

Approximately 1.5 Volts DC is present at the probe tips when the instrument is fully charged. Some very sensitive electronic components, (typically marked in a conspicuous manner), can be damaged by low voltages.

Maintenance

Service

WARNING!

Repair and service of this instrument is to be performed by qualified personnel only. Improper repair or service could result in physical degradation of the meter. This could alter the protection from electrical shock and personal injury this meter provides to the operator. Perform only those maintenance tasks that you are qualified to do.

These guidelines will help you attain long and reliable service from your instrument:

1. Keep your meter dry. If it gets wet, wipe it dry immediately.
2. Whenever practical, keep the instrument away from dust and dirt, which can cause premature wear and collect on internal components.
3. Although your instrument is built to withstand the rigors of daily use, it can be damaged by severe impacts. Use reasonable caution when using and storing the instrument.

Cleaning and Decontamination

Periodically clean your meter's case using a damp cloth. **DO NOT** use abrasives, cleaning solvents or strong detergents, as they may damage the finish or affect the reliability of the structural components.

Probe tips can be cleaned with an abrasive, adequate to remove build-up, to ensure good electrical contact.



DANGER!

DO NOT submerge this instrument in liquid! Liquids may enter this instrument during cleaning and leak out in subsequent use, exposing the user to dangerous voltage during measurement.

Repair

This unit contains no user serviceable parts. In the event your instrument is physically damaged or does not function properly, please return the instrument to UEi following the warranty and service instructions.

Specifications

Operating range

| | |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage | 12 to 600 Volts DC or AC (at 50 - 60 Hz) |
| | Maximum voltage input 700 V DC or AC (ground to phase) |
| | Single probe sensitivity = 100 - 700 V AC (audio only) |
| Continuity | Audio tone from 0 to 900 KΩ |
| | (Requires changed instrument) |
| | Output to unit under test: Approximately 2 μA at 1.5 V DC |
| | Charging time: ≥ 5 sec @ ≥ 100 and < 700 V AC |
| | Recommended time between charges: 30 min @ no-load |
| | Continuos operation time between charges: 60 + sec* |
| | *Operating time is dependent upon time since last charge |
| Operating temperature and humidity | 14 - 131°F (-10 - 55°C) @ $\leq 85\%$ RH |
| Power consumption | < 250 mA (Continuous) |
| Display | Vertical panel of light emitting diode LEDs |
| Size (excluding detachable test lead) | 2-1/6" (W) x 9-1/8" (H) x 1-3/4" (D) (53 mm x 230 mm x 45 mm) |
| Weight | .46 lbs. (210 Grams) |
| Power supply | Rechargeable capacitor - draws power from source tested |
| Accuracy | This instrument is not intended for precise measurement LED indicators will light when voltage approaches an indicated value, and remain lit when higher voltage is applied *240/208volt cross sensitivity: The 240 volt LED begins to illuminate at about 210 volts - Although some 208 volt sources may illuminate the 240 volt LED, it typically does not fully illuminate until it reaches approximately 215 volts. |
| Response | 1 sec. maximum |
| Protection class | IP50 |
| Over-voltage category | CAT III, 700 volts to ground |
| Pollution degree | 2 |
| Calibration cycle | Annual certification is recommended |



ECT600A

Electrical Current Tester

Limited Warranty

The ECT600A is warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi 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. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge. Return the unit postage paid and insured to:

1-800-547-5740 • FAX: (503) 643-6322
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This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

