

# Test Equipment



**Depot**

#61-085

#61-086

1-800-517-8431



*Vol-Con® XL (61-086)  
Voltage/Continuity Tester  
and Vol-Test™ (61-085)  
Voltage Tester  
Instruction Manual*

## WARNING

### Read First: Safety Information

This tester complies with UL3111-1, Cat III-600 overvoltage protection, Pollution Degree 2. Use the tester only as specified in this manual; otherwise, the protection provided by the tester may be impaired.

### Warning

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

- Do not use tester if it is damaged.  
Visually inspect tester to ensure case is not cracked and battery cap is 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 connectors.
- Do not use tester 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 tester. Voltage is not to exceed 600V.
- Always operate this solenoid-type tester within the specified duty cycle on the front of the tester. Duty cycle ratio is:
  - 1:15 ON:OFF time.
  - Maximum ON time is 15 seconds.
- Do not use without batteries and cap properly installed.
- Remove test leads prior to removing battery cap.

## Caution

To protect yourself, think "Safety First":

- Voltages exceeding 30VAC or 60VDC pose a shock hazard so use caution.
- Never ground yourself when taking electrical measurements.
- Use appropriate personal protective equipment such as safety glasses, face shields, insulating gloves, insulating boots, and/or insulating mats.
- Use the 3-Step Testing Method. Before each use:
  - Perform a continuity test by touching the probe tips together, an audible sound should be heard and the continuity LED should light. This test verifies the functionality of the batteries and test leads (61-086 only).

- Verify tester operation by measuring a known voltage. Apply tester to circuit under test. And, then test on the known live voltage again to ensure proper operation.
- Connect the black common lead to ground before applying the red test lead to 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.

### Features:

- Vibration Mode w/indicator movement
- Audible and LED Indication of Voltage Levels (61-085 has LED indication only).
- Auto-Switching Voltage/Continuity Technology (61-086 only)
- Independent solenoid and electronic circuitry design provides back-up voltage indication for added safety.
- Low Impedance Measuring Device
- Replaceable Test Leads
- Shielded probe tips
- Ultrasonically welded and o-ring sealed for added durability

### Accessories:

- TL-82 Resistor-fused test leads
- C-90 Soft-sided carrying case

### To Measure AC Voltage:

- Ensure that the plug for the test leads is fully seated into the banana jacks.
- Connect the tester in parallel with the

load or circuit.

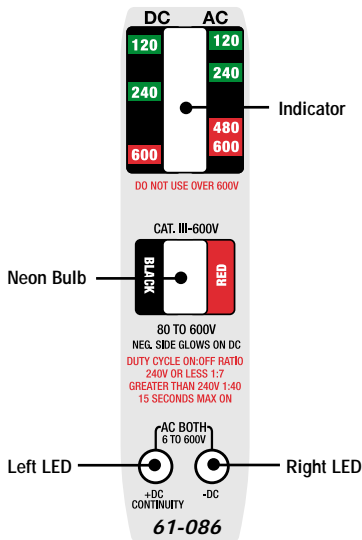
- The tester indicates both the voltage type and the voltage level. (See Tester Operation table)

### To Measure DC Voltage:

- Ensure that the plug for the test leads is fully seated into the banana jacks.
- Connect the tester in parallel with the load or circuit.
- The tester indicates the voltage type, polarity, and the voltage level. (See Tester Operation table)

### To Test for Continuity: (61-086 only)

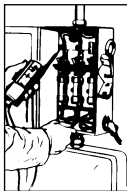
- Ensure that the plug for the test leads is fully seated into the banana jacks.
- De-Energize circuit before performing continuity test. Note, if voltage is present in the circuit, the tester automatically switches to voltage indication mode.
- Test for continuity by connecting the tester to the circuit.
- If circuit has  $500k\Omega$  or less resistance, an audible indication is heard and the Continuity LED lights. (See Tester Operation table)
- Reversing prods on the circuit under test verifies continuity versus low voltage +DC.



## Applications:

### • Locating Blown Fuses

With power off: Place tester across the suspected fuse to perform continuity check. If continuity LED turns "On," the fuse is good. If the continuity LED does not turn "On," the fuse is defective. (61-086 only)



With power on: Place tester across the "source" side of one fuse and the load side of an adjoining fuse. If no voltage is indicated, the fuse next to the load side prod is blown. If voltage is indicated, the fuse next to the load side prod is OK. Repeat the same test with the prods on the opposite side of the same two fuses to check the other fuse.

	61-086 only			
	Neon Bulb	Left LED	Right LED	Indicator
Continuity	Off	On	Off	No movement.
Open Circuit				
No Voltage	Off	Off	Off	No movement.
6-65 AC	Off	On	On	No movement.
6-90 DC	Off	On if black prod is on negative, off if it is on positive.	On if red prod is on negative, off if prod is reversed.	No movement.
65-110 AC	On	On	On	Little or no movement.
90-110 DC	On	On if black prod is on negative, off if it is on positive.	On if red prod is on negative, off if prod is reversed.	Little or no movement.
110-600 AC	On	On	On	Scale indicates relative magnitude.
110-600 DC	On	On if black prod is on negative, off if it is on positive.	On if red prod is on negative, off if prod is reversed.	Scale indicates relative voltage.

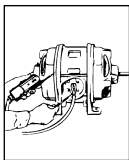
Tester Operation Table

### • Finding Grounded Side of Line (neutral)

Hold one test prod to the ground and touch the other test prod to each of the line terminals until one is found that does not give a voltage indication. The continuity LED should be "On." This is the grounded side of the line.

- **Testing for “Grounded” Side of Motor or Appliance**

With power to motor or appliance “Off,” touch one test prod to the frame and the other prod to each of the terminal connections. The terminal which turns the continuity LED “On” is the grounded side. With power to motor or appliance “On,” place tester across the frame and to each of the terminal connections. The terminal which does not give a voltage indication, but does give a continuity indication, is the grounded side.



- **Testing for 25 to 60 Cycle Frequency**

Place tester between each side of AC line. A low frequency hum and slow vibrations indicate 25 cycle current. 60 cycle current is indicated by a higher frequency hum and more rapid vibrations.

- **Checking Continuity of Cords, Motors, Appliances, etc. (61-086 only)**

Remove power source and place tester across circuit to be tested. Continuity LED turns “On” and an audible beep is heard if resistance is less than 500K ohms.

- **Locating Excessive Leakage to Ground**

Place tester across the neutral terminal

and the ground, only the continuity light should turn “On,” indicating neutral and ground are connected. If the “ – DC” light also turns “On,” there is 6VAC or greater between neutral and ground indicating a high resistance leakage to ground. High resistance leakage is qualified since a low resistance (high current) leak to ground would open a circuit breaker or blow a fuse.

### **Battery Replacement: (61-086 only)**

- Replace batteries when touching the leads together no longer lights the continuity LED or produces an audible sound.
- Remove test leads from tester.
- Loosen the encapsulated screw from the bottom of the case.
- Remove battery cap.
- Replace the batteries with (4) new 1.5V button-type batteries (IDEAL# 61-201, IEC #LR44, or NEOA# 1166A).
- Replace battery cap and re-tighten the encapsulated screw.

### **Test Lead Replacement:**

- Replace leads only with IDEAL test leads below.
  - # TL-80 Standard Test Leads with Shielded Probe Tips
  - # TL-82 Resistor-fused Test Leads with Shielded Probe Tips. Each probe tip contains a special, current-limiting resistor which acts like a fuse to limit short-circuit current and pre-

vents dangerous arcing during a shorted condition. The resistors are rated to  $140\Omega$  +/- 10%. Fusing current is 1A at 125V. Fusing time is 30-60ms at 125V, without causing dangerous conditions during opening of the fuse element. Leads need to be replaced when fuse has opened.

Note that TL-80 and TL-82 test leads can only be specifically used with the 61-085 and 61-086 testers.

### Maintenance:

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

### Service, and Replacement Parts:

For replacement parts or to inquire about service information contact

### IDEAL INDUSTRIES, INC.

Attn: Repair Dept.

1000 Park Avenue

Sycamore, IL 60178

Technical Support: 1-877-901-2005

or visit our website

[www.testersandmeters.com](http://www.testersandmeters.com).

### Specifications:

VAC Ranges: 120V, 240V, 480V, 600V AC.

VAC Accuracy: Relative indication only

VDC Ranges: 120V, 240V, 600V DC

VDC Accuracy: Relative indication only

Continuity (61-086 only): Continuous LED and audible indication at less than  $500k\Omega$  resistance.

Response time of 100ms.

**Operating Frequency:** 25-60 Hz

Input Impedance: Low

**Operating Environment:** 32° F to 122° F (<70% humidity)

**Storage Temp.:** -4° F to 140° F (<80% humidity)

**Altitude:** 2000m

Indoor Use

**Battery:** (4) 1.5V (IDEAL# 61-201, IEC #LR44, or NEOA# 1166A).

**Battery Life:** 200 hours typical.

**Accessories included:** Test Leads, (4) 1.5V "LR44" batteries, operating instructions

**Dimensions:** 6.0" (H), 2.3" (W), 1.2" (D)

**Weight:** 8.0 oz

**Safety:** EN61010, CAT III 600V, CE, UL, (3111) cUL

■ **Double Insulation** 