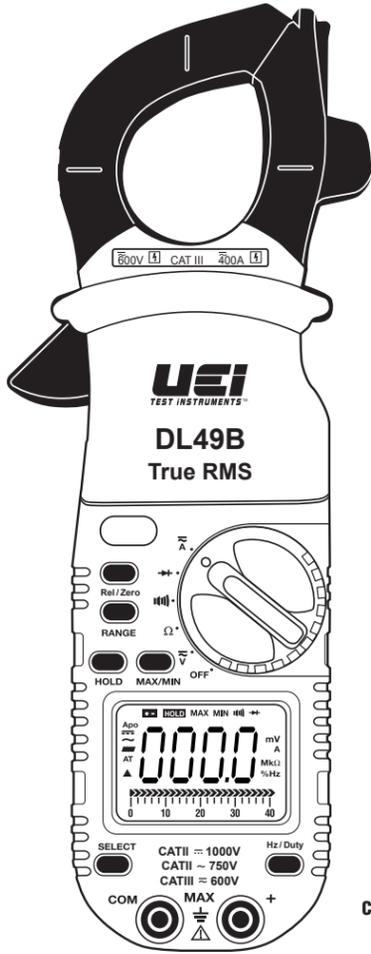


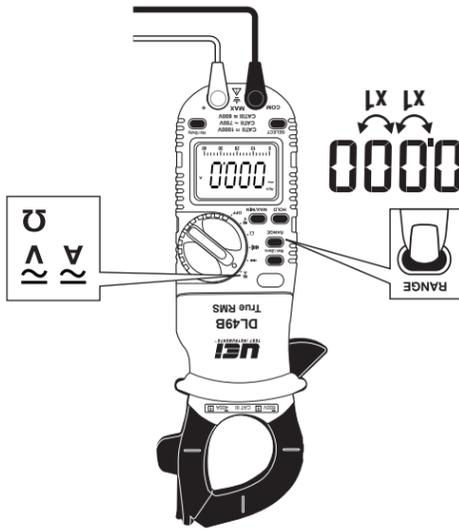
Digital Clamp-On Multimeter

INSTRUCTION MANUAL

ENGLISH



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



Auto / Manual Range

	• Press to hold the reading on the display. • Press again to return to live reading.
	• Press to enter Max / Min mode; the largest and smallest values will be saved while in this mode. • Press repeatedly to alternate between the maximum and minimum readings. • Press for 2 seconds to return to live reading and clear the stored maximum and minimum values. <i>Note: Select range prior to selecting Min/Max to capture large values</i>
	• Press repeatedly to cycle through manual ranges. • Press for 2 seconds to return to auto ranging mode. • AT is displayed on LCD only during auto ranging mode. <i>Note: Select range prior to Min/Max for best results.</i>
	• Press to enable/disable mode and set reference value. • Display will show the difference between the set reference
	• Select V or A setting.
	• Select between AC and DC voltage. • Select between AC and DC current.

FEATURE LEGEND

	AC Source
	Ground
	DC/AC Voltage or Current
	DC Direct Current
	AC Alternating Current
	Warning or Caution
	Double Insulated Class II
	Safe for disconnect
	From live conductors

INTERNATIONAL SYMBOLS

	m	Milli (x 10 ⁻³)
	Relative / Zero Mode	
	Resistance in Ohms	
	Voltage Measurement	
	Current in Amps	
	Frequency Mode	
	Maximum Reading	
	Minimum Reading	
	Low Battery	
	Overload: Range Exceeded	
	Auto Power-Off Active	
	Auto Range Active	
	DC Measurement	

SYMBOLS USED ON LCD

- **Low battery:** is displayed if battery voltage drops below operating voltage.
- **Auto-Power-Off:** After 30 minutes of non-use the selected range.
- a. The bar graph shows an approximate analog representation of a measurement.
- b. The bar graph responds much faster than the digital display.
- c. The scale of the bar graph is zero to the maximum reading of the selected range.
- **True RMS**
- **Data hold mode**
- **MIN/MAX (All ranges except Frequency & Capacitance) . . Min/Max**
- **DC A Zero mode** Rel/Zero
- **Test lead storage**
- **Autorangeing measurements with manual ranging capability**
- **Bar Graph**

FEATURES

- AC/DC Voltage
- AC/DC Current
- Resistance
- Frequency & Duty cycle
- Diode test
- Continuity

FUNCTIONS

Range	Accuracy	1.0 - 99.0% ±(0.2% per kHz + 0.1% + 5 digits)	600V RMS
Overload Protection			

Duty Cycle Measurement

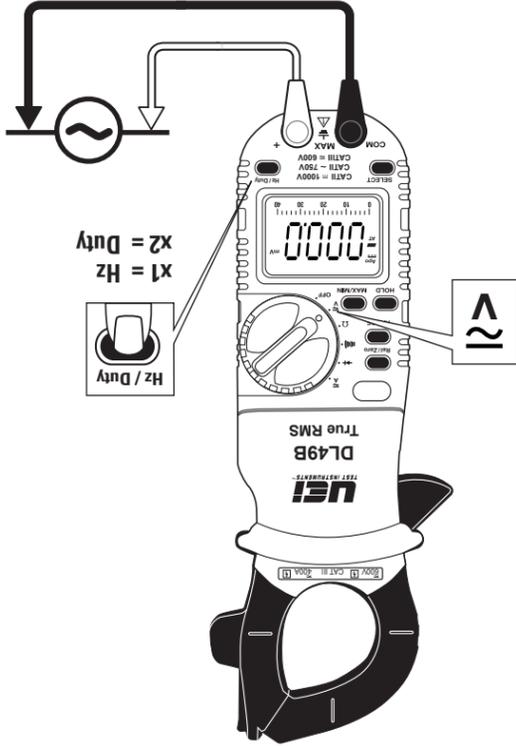
Range	Resolution	Accuracy	Overload Protection
99.99Hz	0.01Hz	± (0.1% + 4 digits)	600V RMS
999.9Hz	0.1Hz		
9.999kHz	1Hz		
99.99kHz	10Hz		

Frequency Measurement

Range	Resolution	Accuracy	Overload Protection
99.99kHz	10Hz	± (0.1% + 4 digits)	600V RMS
9.999kHz	1Hz		
999.9Hz	0.1Hz		
99.99kHz	10Hz		



Features:



Frequency (Hz) / Duty Cycle

- To ensure safe operation and service of the tester, follow these instructions. Failure to observe these warnings can result in severe injury or death.
- Before each use, verify meter operation by measuring a known voltage or current.
- Never use the meter on a circuit with voltages that exceed the category based rating of this meter.
- Do not use the meter during electrical storms, or in wet weather.
- Ensure meter leads are fully seated, and keep fingers away from the metal probe contacts when making measurements.
- Do not open the meter to replace batteries while the probes are connected.
- Use caution when working with voltages above 60V DC, or 25V AC RMS. Such voltages pose a shock hazard.
- To avoid false readings that can lead to electrical shock, replace batteries if a low battery indicator appears.
- Unless measuring voltage or current, shut off and lock out power before measuring resistance or capacitance.
- Always adhere to local and national safety codes. Use Personal Protective Equipment (PPE) to prevent shock and arc blast injury.

WARNINGS

- **Accuracy:** ± (% of reading + # of least significant digits)
- **Calibration:** Accurate for one year
- **CAT Rating:** CAT III 600V, CAT II 1000V
- **Certifications:** UL & cUL Listed IEC61010-2-032
- **Battery type:** 2 x 1.5V AAA or LR03
- **IEC61010-2-031 Silicon Test Lead**
- **Weight:** 11.9oz.
- **Dimensions:** 8.625" x 3.25" x 1.5"
- **Polarity:** Automatic indication for positive polarity / Minus(-) sign for negative polarity
- **Overrange:** "OL" is displayed
- **Refresh Rate:** 3 times/sec segments bargraph
- **Display:** 3-3/4 digits 4000 counts single LCD display(s) with 20
- **Pollution degree:** 2
- **Temperature Coefficient:** Nominal 0.1 x (Specified accuracy) / °C (<18°C or >28°C : <64°F or >82°F)
- **Relative humidity:** 0% to 80% at 32°F to 131°F (0°C to 55°C), 0% to 70% at 140°F (-20°C to 60°C) at < 80% R.H
- **Storage Temperature:** -4°F to 140°F (-20°C to 60°C) at < 80% R.H
- **Operating Temperature:** 32°F to 122°F (0°C to 50°C) at < 75% R.H
- **Humidity:** 80% max
- **Altitude:** Operating - up to 2000m Storage - 10,000m

GENERAL SPECIFICATIONS

DL49B Instruction Manual



Caution: This symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal.



DISPOSAL / RECYCLE

Remove the batteries when instrument is not in use for a prolonged period of time. Do not expose to high temperatures or humidity. After a period of storage in extreme conditions exceeding the limits mentioned in the Specifications section, allow the instrument to return to normal operating conditions before using it.

STORAGE

Turn instrument off and disconnect test leads. Clean the instrument by using a damp cloth. Do not use abrasive cleaners or solvents.

CLEANING

- When indicator is displayed on the LCD, batteries must be replaced.
- Remove the back screw and replace 2 x AAA batteries.

BATTERY REPLACEMENT

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

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For more information on warranty and service:

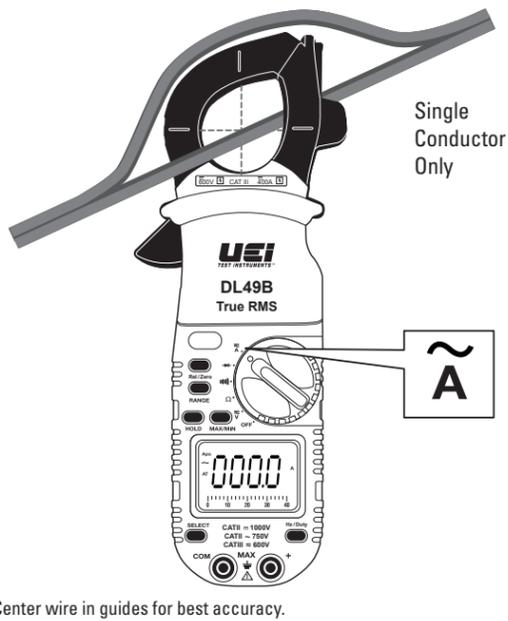
A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge.

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 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.

The DL49B is warranted to be free from defects in materials and workmanship for a period of three 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.

WARRANTY

AC Current (large): < 400A



Single Conductor Only

- Center wire in guides for best accuracy.
- Opposing currents cancel (use line-splitter when necessary).



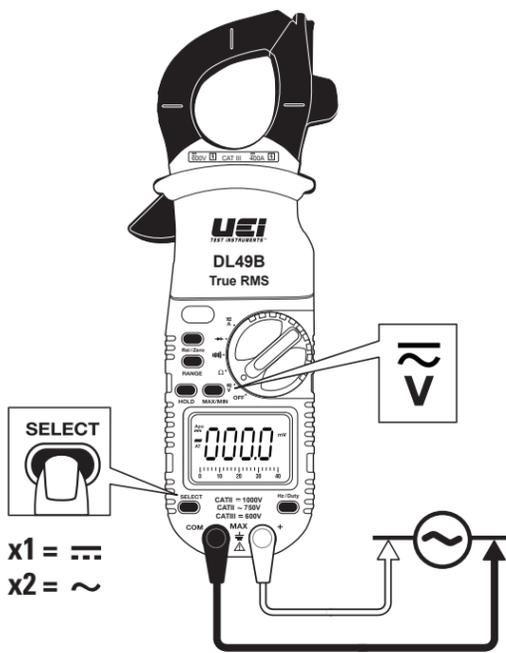
AC Current Measurement

Range	Resolution	Accuracy	Overload Protection
40A	0.01A	± (2.9% + 15 digits)	600V RMS
400A	0.1A	± (1.9% + 8 digits)	

True RMS: 45Hz to 400Hz

* Minimum Current for Clamp Measurement: 0.2A

AC / DC Voltage: < 750V AC or 1000V DC



x1 = x2 =

- Use CAT III rated leads or higher. Do not attempt to measure more than 1000V DC or 750V AC.
- Keep hands below line when measuring high current levels.

- Select AC or DC voltage source.



DC Voltage Measurement

Range	Resolution	Accuracy	Overload Protection
400mV	0.1mV	± (0.5% + 4 digits)	1000V
4V	1mV		
40V	10mV		
400V	100mV		
1000V	1V	± (0.8% + 10 digits)	

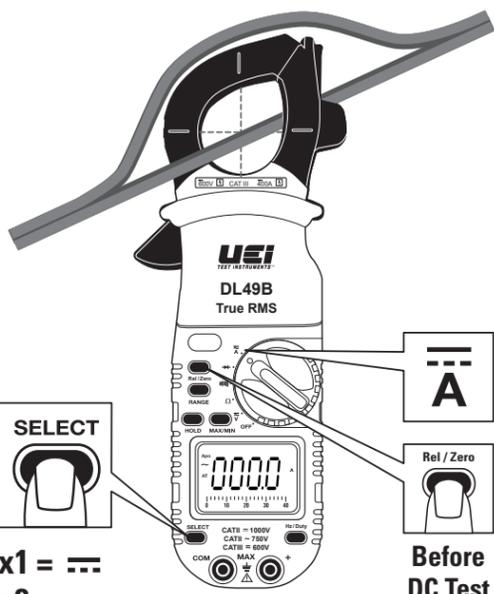
Overload Protection: 1000V

AC Voltage Measurement

Range	Resolution	Accuracy	Overload Protection
400mV	0.1mV	± (2.0% + 5 digits)	750V RMS
4V	1mV		
40V	10mV		
400V	100mV		
750V	1V		

True RMS: 45Hz to 400Hz

DC Current (large): < 400A



x1 = x2 =

Before DC Test

- Center wire in guides for best accuracy.
- Opposing currents cancel (use line-splitter when necessary).



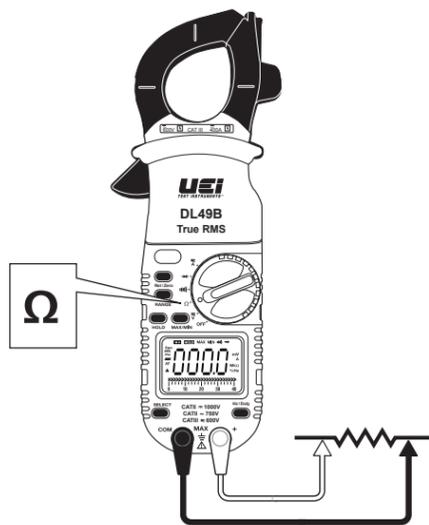
DC Current Measurement

Range	Resolution	Accuracy	Overload Protection
40A	0.01A	± (2.5% + 15 digits)	600V RMS
400A	0.1A	± (1.5% + 8 digits)	

True RMS: 45Hz to 400Hz

* Minimum Current for Clamp Measurement: 0.2A

Resistance: < 40MΩ

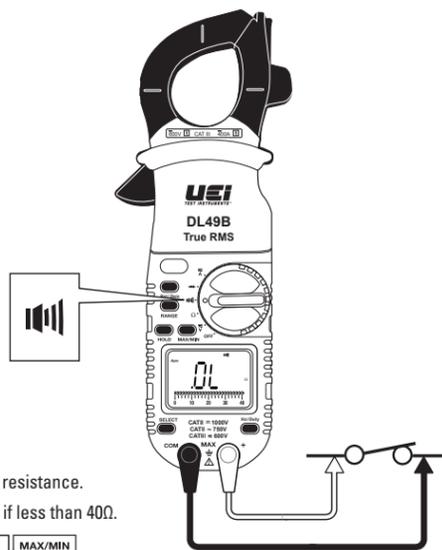


- Do not measure resistance on a live circuit.



Range	Resolution	Accuracy	Overload Protection
400Ω	0.1Ω	± (1.0% + 4 digits)	600V RMS
4kΩ	1Ω		
40kΩ	10Ω		
400kΩ	100Ω		
4MΩ	1kΩ		
40MΩ	10kΩ	± (2.0% + 4 digits)	

Continuity



- Display shows resistance.
- Buzzer sounds if less than 40Ω.

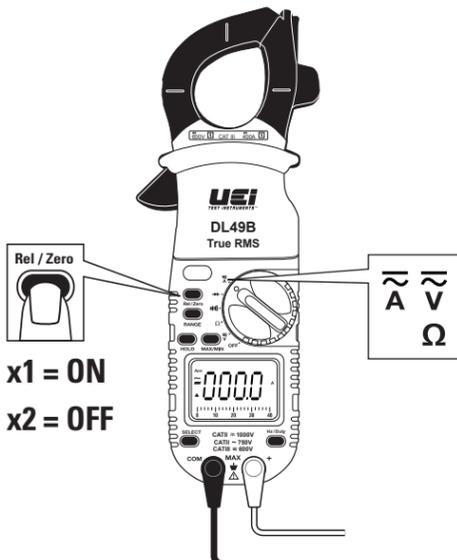


Continuity Test

Overload Protection	Open Circuit Voltage
600V RMS	< 0.44V

Threshold Approx : < 40Ω

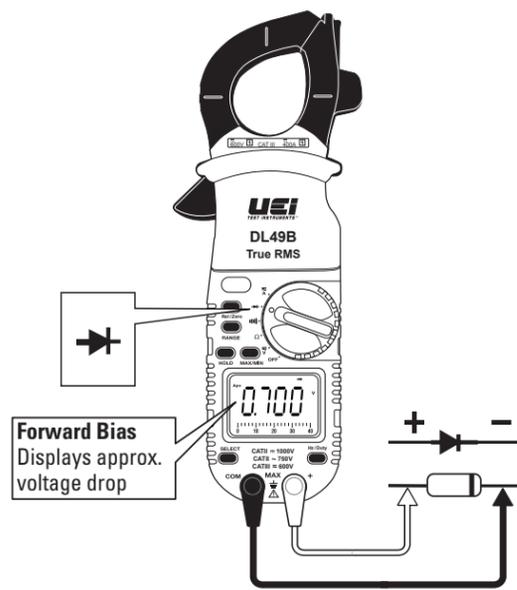
Relative Reading / DC A Zero



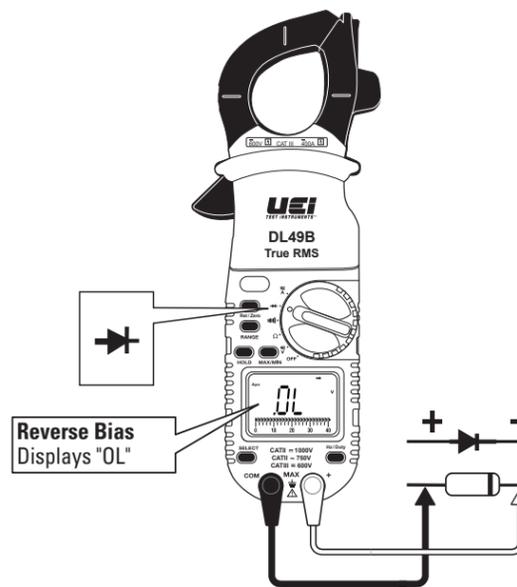
x1 = ON x2 = OFF

Diode

GOOD DIODE

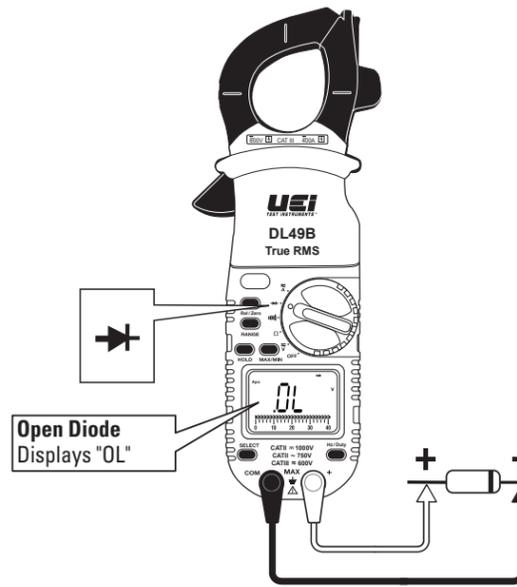


Forward Bias Displays approx. voltage drop

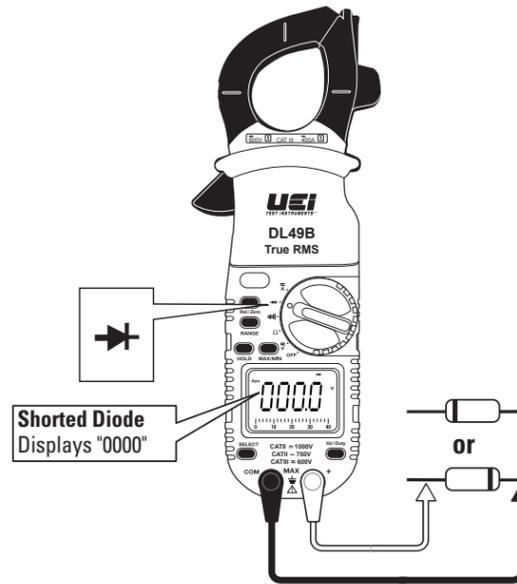


Reverse Bias Displays "OL"

BAD DIODE



Open Diode Displays "OL"



Shorted Diode Displays "0000"

- Forward voltage drop if forward biased.
- "O.L." if reverse biased.



Diode Test

Overload Protection	Range	Test Current	Open Circuit Voltage
600V RMS	2.0V	Appx. 0.25mA	< 1.6V DC