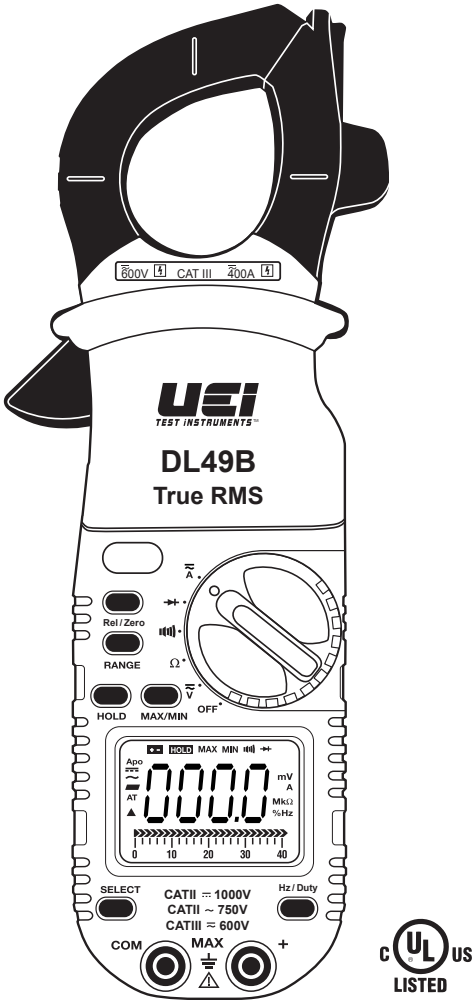


Digital Clamp-On Multimeter

INSTRUCTION MANUAL

ENGLISH



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

DL49B Instruction Manual

GENERAL SPECIFICATIONS

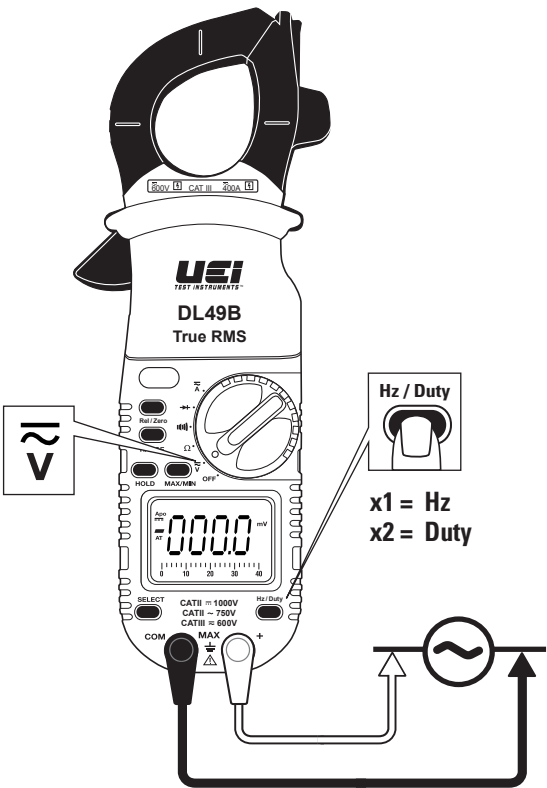
- **Altitude:** Operating - up to 2000m
Storage - 10,000m
- **Humidity:** 80% max
- **Operating Temperature:** 32°F to 122°F (0°C to 50°C) at < 75% R.H
- **Storage Temperature:** -4°F to 140°F (-20°C to 60°C) at < 80% R.H
- **Relative humidity:** 0% to 80% at 32°F to 95°F (0°C to 35°C),
0% to 70% at 32°F to 131°F (0°C to 55°C)
- **Temperature Coefficient:** Nominal 0.1 x (Specified accuracy) / °C
(<18°C or >28°C ; <64°F or >82°F)
- **Pollution degree:** 2
- **Display:** 3-3/4 digits 4000 counts single LCD display(s) with 20 segments bargraph
- **Refresh Rate:** 3 times/sec
- **Overrange:** "OL" is displayed
- **Polarity:** Automatic(no indication for positive polarity) ; Minus(-) sign for negative polarity
- **Dimensions:** 8.625" x 3.25" x 1.5"
- **Weight:** 11.9oz.
- **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**
- **Accuracy:** ± (% of reading + # of least significant digits)

⚠ WARNINGS

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.
- Do not use the meter or test leads if they appear to be damaged.
- 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.

Frequency (Hz) / Duty Cycle



Features:



Frequency 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		

Sensitivity: 1.8V RMS

Duty Cycle Measurement

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

FUNCTIONS

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

FEATURES

- True RMS
- Data hold mode HOLD
- MIN/MAX (All ranges except Frequency & Capacitance) . . Min/Max
- DC A Zero mode Rel/Zero
- Test lead storage
- Autoranging measurements with manual ranging capability
- Bar Graph
 - 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.
- Auto-Power-Off: After 30 minutes of non-use
- Low battery: is displayed if battery voltage drops below operating voltage.

SYMBOLS USED ON LCD

	AC Measurement		DC Measurement
	Negative DC Value	AT	Auto Range Active
O.L.	Overload: Range Exceeded	Apo	Auto Power-Off Active
	Low Battery	HOLD	Hold Active
MIN	Minimum Reading	MAX	Maximum Reading
%	Duty Cycle Mode	Hz	Frequency Mode
V	Voltage Measurement	A	Current in Amps
Ω	Resistance in Ohms		Diode Test
▲	Relative / Zero Mode	k	Kilo (x 10³)
m	Milli (x 10⁻³)	M	Mega (x 10⁶)

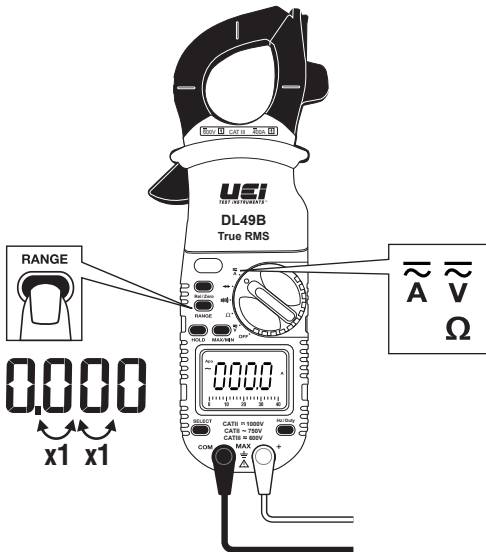
INTERNATIONAL SYMBOLS

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

FEATURE LEGEND

	• 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. Note: Select range prior to selecting Min/Max to capture large values
	• 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. Note: Select range prior to Min/Max for best results.
	• Press to enable/disable mode and set reference value. • Display will show the difference between the set reference
	• Select or setting.
	• Select between AC and DC voltage. • Select between AC and DC current.

Auto / Manual Range



WARRANTY

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.

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.

For more information on warranty and service:

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

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

BATTERY REPLACEMENT

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

CLEANING

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

STORAGE

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.

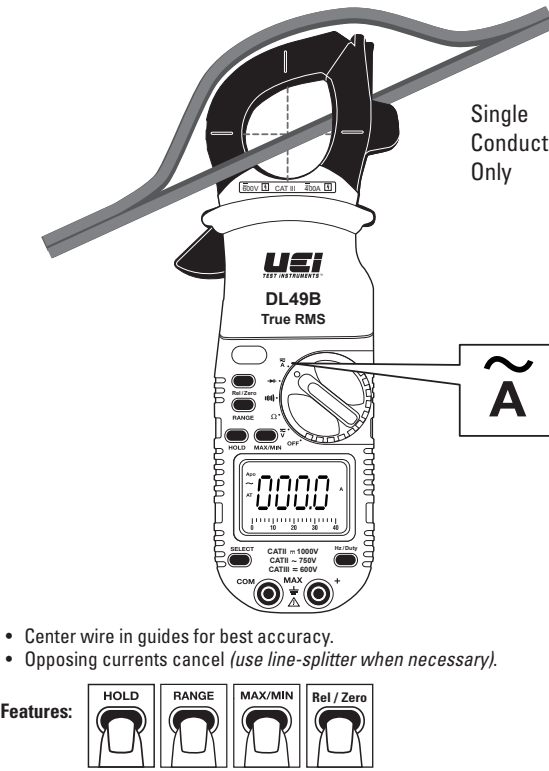
DISPOSAL / RECYCLE



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



AC Current (large): < 400A



Single Conductor Only

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

Features:

HOLD

RANGE

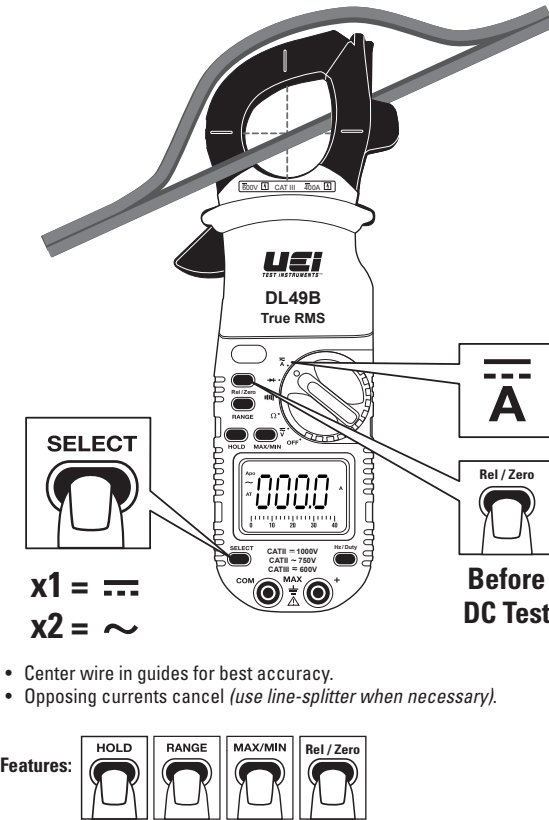
MAX/MIN

Rel / Zero

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

DC Current (large): < 400A



Before DC Test

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

Features:

HOLD

RANGE

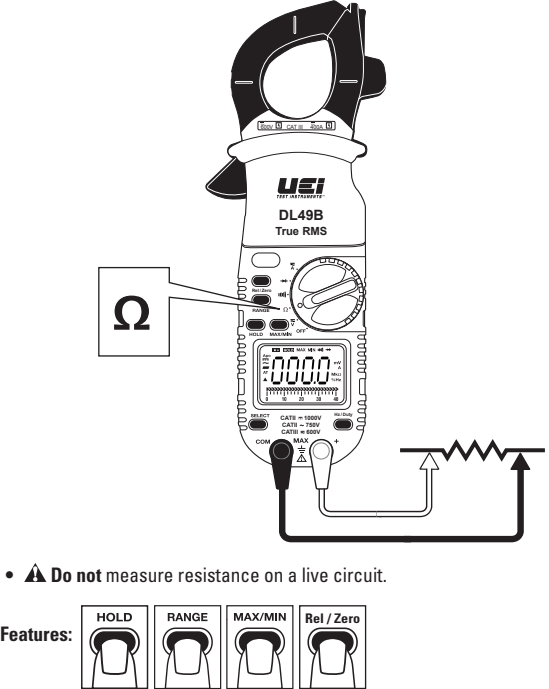
MAX/MIN

Rel / Zero

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.

Features:

HOLD

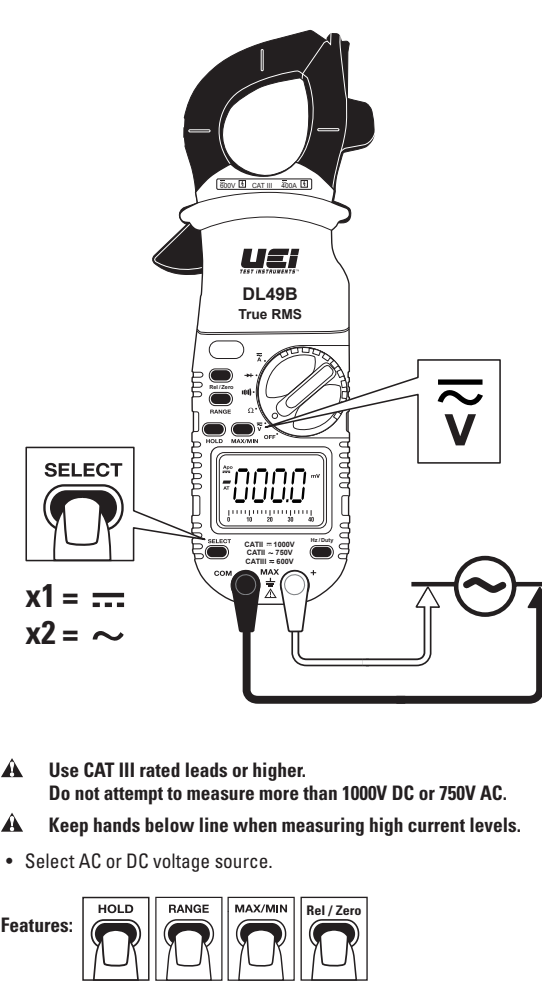
RANGE

MAX/MIN

Rel / Zero

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)	

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



x1 = AC
x2 = DC

- ⚠ 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.

Features:

HOLD

RANGE

MAX/MIN

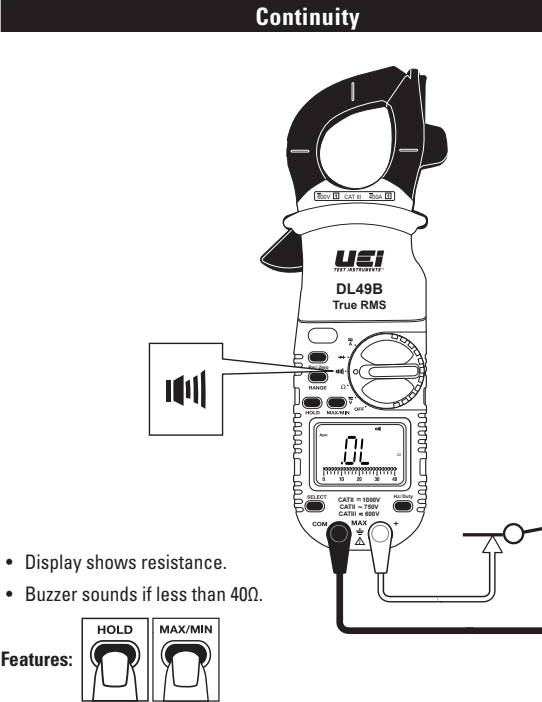
Rel / Zero

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

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



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

Features:

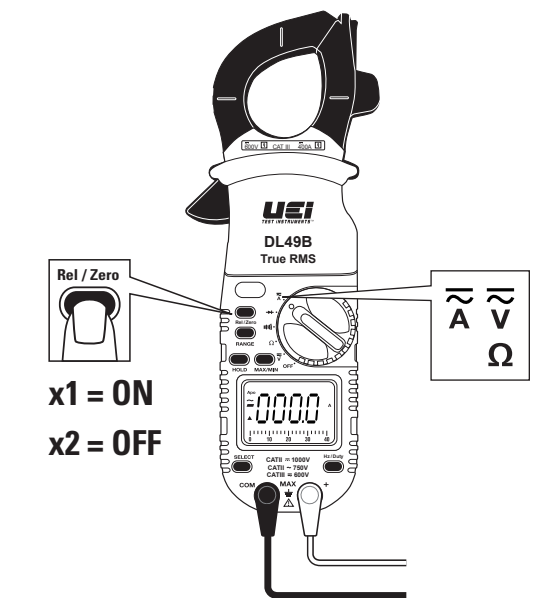
HOLD

MAX/MIN

Overload Protection	Open Circuit Voltage
600V RMS	< 0.44V

Threshold Approx : < 40Ω

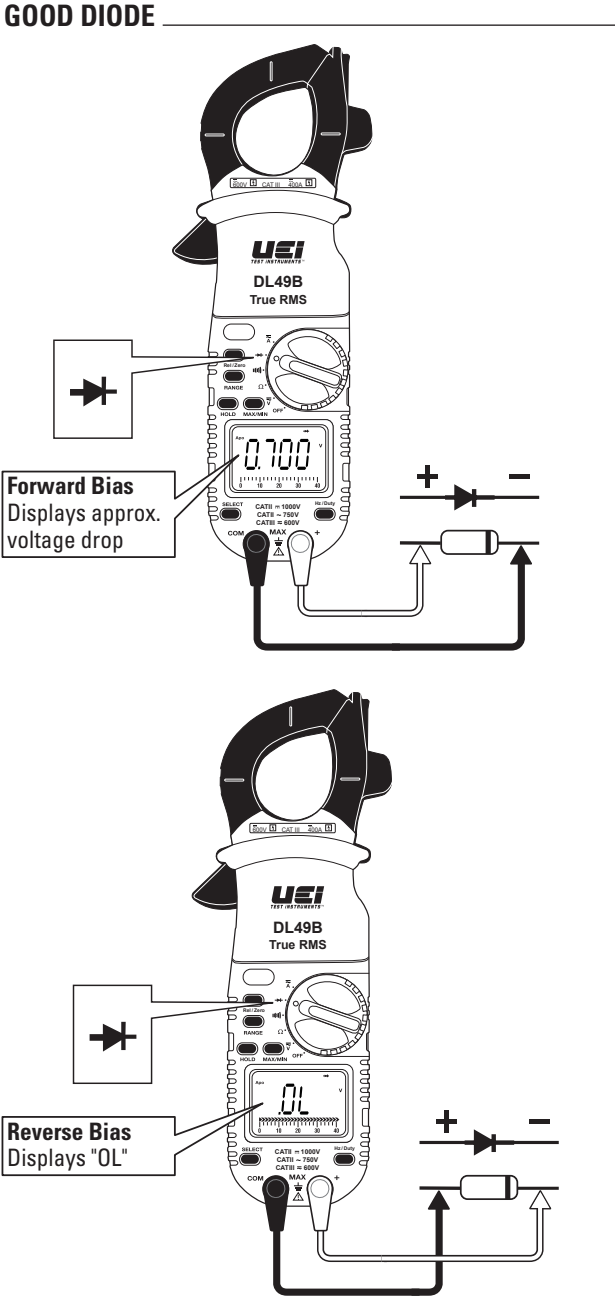
Relative Reading / DC A Zero



x1 = 0N
x2 = OFF

Diode

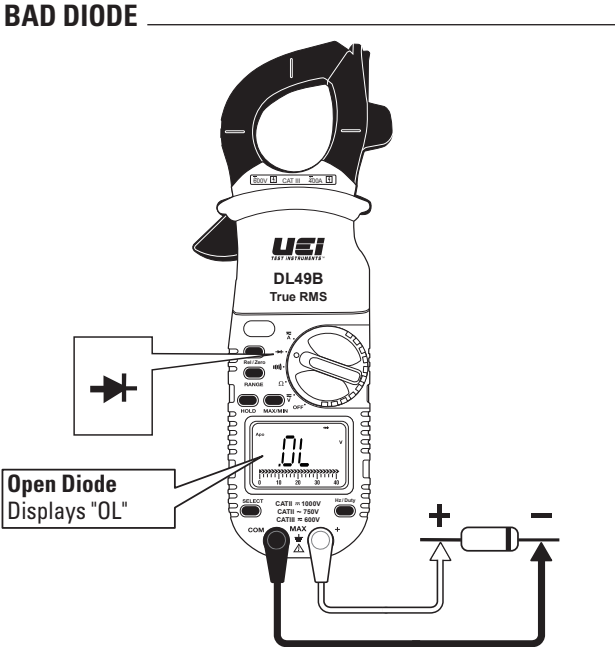
GOOD DIODE



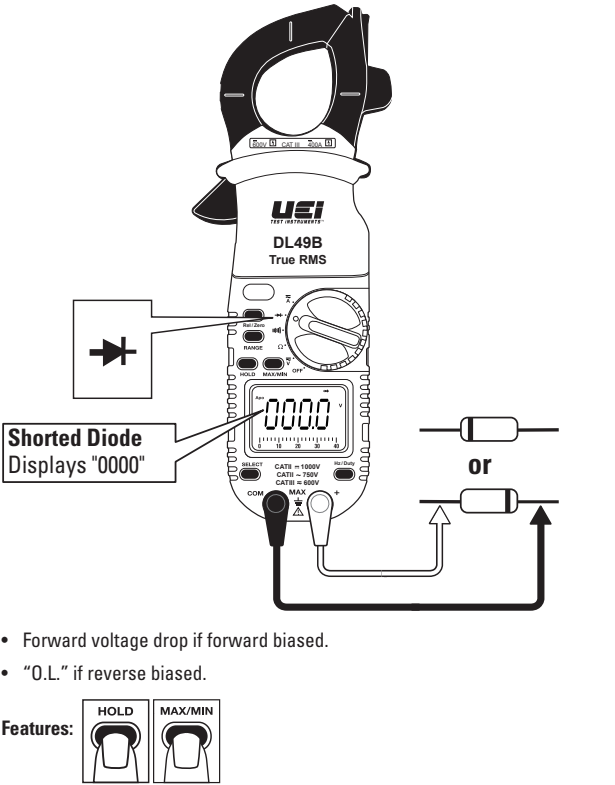
Forward Bias Displays approx. voltage drop

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.

Features:

HOLD

MAX/MIN

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