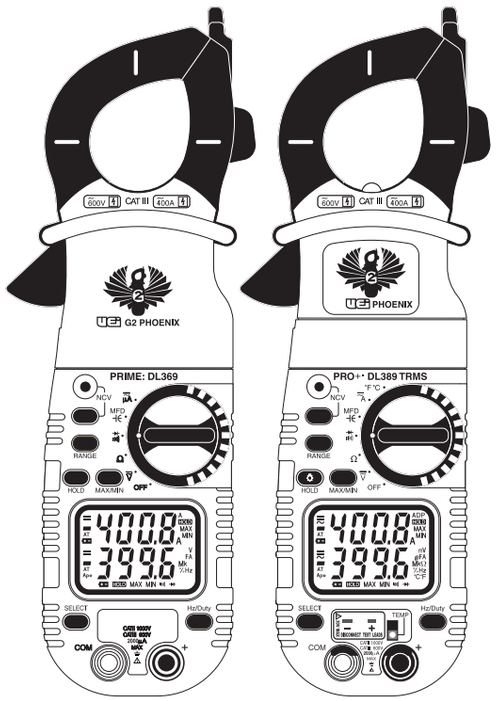
INSTRUCTION MANUAL

G2 PHOENIX

DL369/DL379/DL389



Featuring The New WORKLIGHT

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Introduction

The G2 Phoenix Series is a hand-held, battery powered digital multimeter with clamp-on current measuring capability, back light and work area light.

Features include

- 3-3/4 digit, count 4000 count LCD display
- Auto-ranging measurement with manual ranging capability
- MIN/MAX (Peak Hold) (all ranges except Frequency)
- Frequency/Duty Cycle/Data Hold
- Auto power off
- Dual display
- Built-in test lead storage
- EasyVue Backlit display & Worklight (DL379 & DL389)
- Detachable current probe with optional current hook adapter for tight spaces (DL379 & DL389)
- Temperature (DL379 & DL389)
- Magnetic mount (DL379 & DL389)
- TRMS Measurement (DL389 only)

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.

- Do not attempt to measure any voltage that exceeds the category based rating of this meter
- Do not attempt to use this meter if either the meter or the test leads have been damaged - Turn instrument in for repair at a qualified repair facility
- Ensure meter leads are fully seated by making a quick continuity check of the leads prior to making voltage measurements
- Keep your fingers away from the test lead's metal probe contacts when making measurements - Always grip the leads behind the finger guards molded into the probes
- Do not open the meter to replace batteries while the probes are connected

⚠ WARNING!

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

- Voltages above 60 volts DC or 25 volts AC may constitute a serious shock hazard
- Always turn off power to a circuit (or assembly) under test before cutting, unsoldering, or breaking the current path - Even small amounts of current can be dangerous
- Always disconnect the live test lead before disconnecting the common test lead from a circuit
- 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
- If any of the following indications occur during testing, turn off the power source to the circuit under test:
  - Arcing
  - Flame
  - Smoke
  - Extreme heat
  - Smell of burning materials
  - Discoloration or melting of components

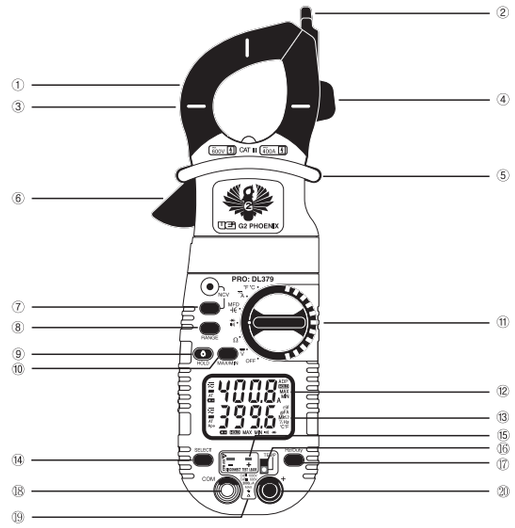
⚠ WARNING!

Higher voltages and currents require greater awareness of physical safety hazards. Before connecting the test leads; turn off the power to the circuit under test; set the meter to the desired function and range; connect the test leads to the meter first, then connect to the circuit under test. Reapply power. If an erroneous reading is observed, disconnect power immediately and recheck all settings and connections.

This meter is designed for trade professionals who are familiar with the hazards of their trade. Observe all recommended safety procedures that include proper lock-out utilization and the use of personal protective equipment, including safety glasses, gloves, and flame resistant clothing.

Equipment is safe for connection and disconnetion to live conductors	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



1. **Clamp:** Measure inductive AC current. Opens to 1.25" (32 mm).

2. **Wire Separation Tab/NCV sensor :** Used to isolate an individual wire from a bundle for testing. NCV sensor helps detect live voltage.

3. **Conductor Alignment Marks:** Used to aid in the visual alignment of a conductor when measuring inductive amperage. Greatest accuracy is achieved when the conductor inside the clamp is centered at the intersection of these marks.

4. **Test Lead Holder:** Used for hands-free use of one of the test probes.

5. **Hand Guard:** Used as a point of reference for the operators safety.

⚠ WARNING!

Always keep your hands and fingers behind the hand guards when measuring current on exposed conductors. Contact may result in serious injury.

6. **Clamp Lever:** Opens and closes current clamp jaw. ***NOTE:*** *The clamp uses a high tension spring to close the jaw. Do not allow fingers or objects to become pinched in the base as jaw closes*

7. **NCV Button:** Activates non-contact voltage function

8. **Range Button:** Used to select range for upper and lower display.

9. **HOLD/Backlight Button:** Freezes display or activates display backlight and work area light. (Backlight and work area light only available on DL379/DL389)

10. **MIN/MAX Button:** Activates MIN/MAX capture function, cycles through minimum value, maximum value. Press longer than two seconds to return to live reading.

11. **Rotary Function Switch:** Turns meter on and is used to select the function desired.

12. **Upper Display** : Used to display current when used with UEi clamp or hook adapter. Displays output from other accessories when connected to the UEi meter.

13. **Lower Display:** Used to display input to test lead jacks. Includes AC/DC Volts, Frequency, Resistance, Diode, Capacitance and AC/DC microamps (µA).

14. **Select Button:** Used to choose measurement mode from selections with multiple options such as AC or DC volts, AC or DC µA, Resistance, Diode, Capacitance or Continuity, Temperature in ˚F or ˚C.

15. **Temperature Input Jack:** Input jack for k-type thermocouple probe (DL379/DL389 only).

16. **Temperature Switch:** Move the Switch down to measure temperature. ***NOTE:*** Test leads must be removed from input jacks prior to operating the temperature function.

17. **Hz/Duty Button:** Used to scroll through Frequency or Duty Cycle when in the AC Voltage measurement mode.

18. **Common Terminal:** The black test lead is plugged into this terminal to supply the ground or "low" reference for all measurements.

19. **Category Max Indicator:** Indicates maximum voltage for the rated working category.

⚠ WARNING!

Do Not exceed 1000 volts DC or AC - RMS at either the common or multifunction imput ports as measured from earth ground.

20. **Multifunction Input Jack:** Used for measuringAC/DC Volts, Frequency or Duty Cycle, Resistance,Diode, Continuity and Capacitance.

Displays and Indicators

DL369 DL379 / DL389

~	AC indicator
=	DC indicator
–	Indicates a negative value (DC Negative Voltage)
Max	Maximum value displayed
Min	Minimum value displayed
A (top display)	Display is in Amps from UEi Clamp or Hook adapter
ADP (top display)	Displays value from adapter
+–	Low battery symbol
HOLD	Hold function activated
	Diode function
	Continuity function
nF / µF	Capacitance (nanofarads or microfarads)
µA	Microamps (1 µA is 0.000001 Amp)
Hz	Frequency measurement
%	Duty Cycle measurement
mV	Millivolts (1 mV is 0.001 Volt)
APO	Auto power off mode active
AT	Auto range function active
O.L	Displayed if the input value exceeds selected range

Operating Instructions

Auto power off
After powering off, the meter will turn back on if you perform one of the following; Change the range, move the position of the selector or any other button is pressed. ***NOTE*** *APO is disabled while in MIN/MAX mode.*

Back-light / work area light(DL379 / DL389 only)
Press the **"HOLD"** button longer than two seconds to activate the backlight/work area light. The lights automatically turn off after 2 minutes to extend battery life.
NOTE: *After activating worklight, press briefly to activate hold.*

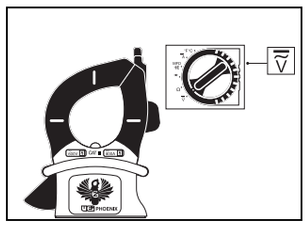
Auto / Manual Range
In auto range the meter will select the best range for the measured value, and **"AT"** is displayed. Press the **"RANGE"** button to cycle through available ranges. **"AT"** will not be on the display when locked in a specific range. Press and hold **"RANGE"** button to return to auto range.

MIN/MAX mode
When using the MIN/MAX capture mode for Amps, it is recommended that you first select the range of the expected maximum value. If this is not done it will lock in the lowest range possible for the initial measurement. If the maximum value exceeds this range the meter will capture **"O.L"** as the maximum value.

Manual ranging will also provide a faster response to the input.

Data Hold
Press the "HOLD" button to activate. This will freeze the reading and range in the display for your review.

Measuring AC Amps

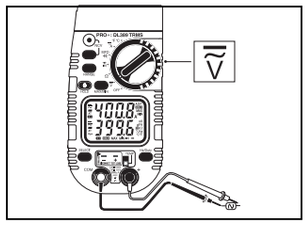


- Select any function to power the upper display.
- Press "MAX/MIN" to activate Max capture, Min capture, or normal display.

NOTE: *Max capture is useful for motor in rush current.*

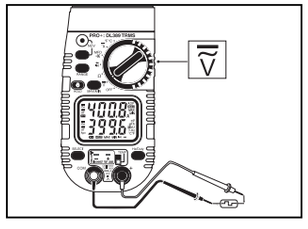
Press **"RANGE"** to select range prior to MAX/MIN.

Measuring AC or DC Volts



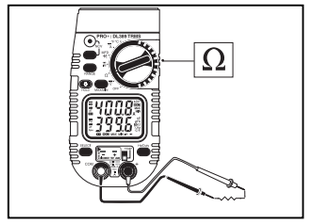
Press "**SELECT**" to change the reading from AC to DC.

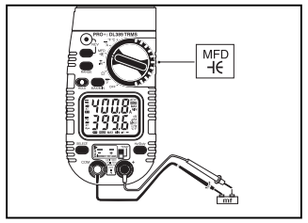
Measuring Frequency or Duty Cycle



Meter must be in AC Volts or ACμ mode first then press "**Hz/Duty**" to change function to Frequency or Duty Cycle.
NOTE: *Frequency greater than 1MHz will display "**0.000 Hz**"*

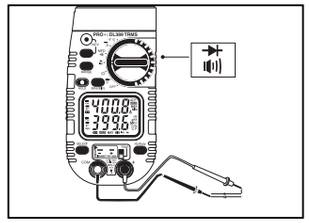
Measuring Resistance and Capacitance





NOTE: Capacitance *- Leave the meter connected to the capacitor for 10 seconds or more for the reading to stabilize.*

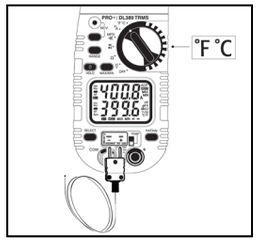
Measuring Continuity and Diode



Press **"SELECT"** to move from Continuity mode to Diode mode.

NOTE: **Diode** - **"OL"** *in reverse mode and approximate forward voltage drop when connected in forward mode.*
Continuity *- Sounds the tone at approximately 50 Ω or less.*

Measuring Temperature (DL379/DL389 only)

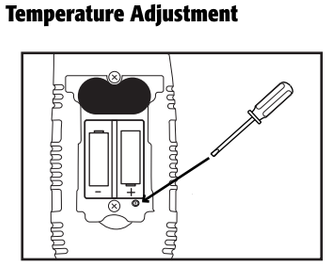


Slide temperature switch down prior to connecting probe.

Press "**SELECT**" to change scale from °F to °C display.

WARNING!
Disconnect test leads from any voltage source and the meter before plugging in thermocouple.

Temperature Adjustment

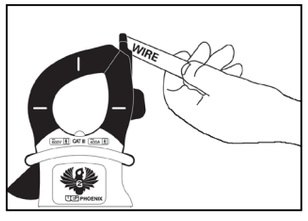


Remove battery cover.
Place temperature probe in a known standard. (Stirred crushed ice in distilled water can be used for 32ºF)

Adjust potentiometer with a fine tip standard screwdriver to match the display to 32ºF.

NOTE: *The adjustment for the potentiometer is accessible through the lower right access port under the battery cover.*

Measuring NCV



Non-Contact Voltage

Press and hold the **"NCV"** button at any range and move the meter near this voltage source.

NOTE *If The backlight / worklight is on, the worklight will turn off during NCV tests.*

Attaching/ Detaching Clamp Head

To detach clamp head first unplug all leads and probes. Firmly grab clamp head and pull apart. When attaching a clamp head or attachment, align heads and push together ensuring the heads lock securely.
NOTE: *Leaving clamp head or attachment plugged in will drain battery.*

Maintenance

Periodic 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.

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

Battery Replacement
Remove screws from battery compartment cover on back of meter and remove cover. Replace batteries with fresh batteries paying attention to polarity position. Replace cover and screws.

Specifications

1. AC Amps Measurement - Jaw input (45Hz to 400Hz)

0.44V

Range	Resolution	Accuracy	Overload Protection
40A	0.01A	±2.9% +15 dgts	400A
400A	0.1A	±1.9% +8 dgts	

* **DL389** 45Hz to 400Hz True RMS (Crest factor <3:1)

2. DC Low Amps Measurement (test lead input)

Range	Resolution	Accuracy	Overload Protection
400μA	0.1μA	±1.2% +3 dgts	2000μA / 600rms
2000μA	1μA		

3. AC Low Amps Measurement (test lead input, 45Hz to 400Hz)

Range	Resolution	Accuracy	Overload Protection
400μA	0.1μA	±2.0% +5 dgts	2000μA / 600rms
2000μA	1μA	±1.5% +5 dgts	

* **DL389** 45Hz to 400Hz True RMS (Crest factor <3:1)

4. DC Volts Measurement

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

5. AC Volts Measurement (45Hz to 400Hz)

Range	Resolution	Accuracy	Overload Protection
400mV	0.1mV	±2.0% +5 dgts	750rms
4V	1mV		
40V	10mV		
400V	100mV		
750V	1V		

* **DL389** 45Hz to 1KHz True RMS (Crest factor <3:1)

6. Ohms Measurement

Range	Resolution	Accuracy	Overload Protection
400Ω	100mΩ	±1.0% +4 dgts	600Vrms
4kΩ	1Ω		
40kΩ	10Ω		
400kΩ	100Ω		
4MΩ	1kΩ		
40MΩ	10kΩ	±2.0% +4 dgts	

7. Diode Test

Range	Open Circuit Voltage	Test Current (typical)	Overload Protection
2.0V	< 2.4V DC	0.25mA	600Vrms

8. Capacitance Measurement

Range	Resolution	Accuracy	Overload Protection
0nF	0.01nF	±3.5% +6 dgts	600Vrms
400nF	0.1nF		
4μF	0.001μF		
40μF	0.01μF		
400μF	0.1μF		
4000μF	1μF		

9. Temperature Measurement (DL379 & DL389 only)

Range	Resolution	Accuracy	Overload Protection
-22˚ to 14˚F (-30˚ to -10˚C)	0.1˚F (0.1˚C)	±5.4˚F (±3.0˚C)	30Vrms
15˚ to 752˚F (-9˚ to 400˚C)	0.1˚F (0.1˚C)	±1.0% +3.6˚F (±1.0% +2.0˚C)	

10. Frequency Measurement

Range	Resolution	Accuracy	Overload Protection
9.999Hz	0.001Hz	±0.1% +4 dgts	600Vrms
99.99Hz	0.01Hz		
999.9Hz	0.1Hz		
9.999kHz	1Hz		
99.99kHz	10Hz		
999.9kHz	100Hz		

Minimum frequency: 0.5Hz, DC V offset should be zero
Sensitivity: > 10% of each AC Volt Range

11. Duty (%) Cycle Measurement

Range	Accuracy	Overload Protection
01. to 99.9%	±(0.2% per kHz +0.1%) +5 count	600Vrms

0.5Hz to 100kHz (pulsewidth > 2usec)

12. Continuity Measurement

Open Circuit voltage <	Overload Protection
Threshold Approximately <50Ω	600Vrms

13. General Specifications

Operating Temperature	32˚ to 113˚F (0˚ to 45˚C)
Storage Temperature	32˚ to 140˚F (0˚ to 60˚C)
Relative Humidity(Stora and Use)	0% to 80% RH
Weight	11.3 Oz (320 Grams)
Calibration Frequency	Annual
UL Listing	UL61010-1
Battery	2 x 1.5V LR03 AAA Size

DL369/DL379/DL389
Clamp-On Meter

Limited Warranty

The DL369/DL379/DL389 is warranted to be free from defects in materials and workmanship for a period of three years 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
Service: (800) 308-7709
www.ueitest.com • Email: info@ueitest.com

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

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