ENGLISH

CL810

INSTRUCTION MANUAL

600A AC/DC Auto-Ranging Digital Clamp Meter

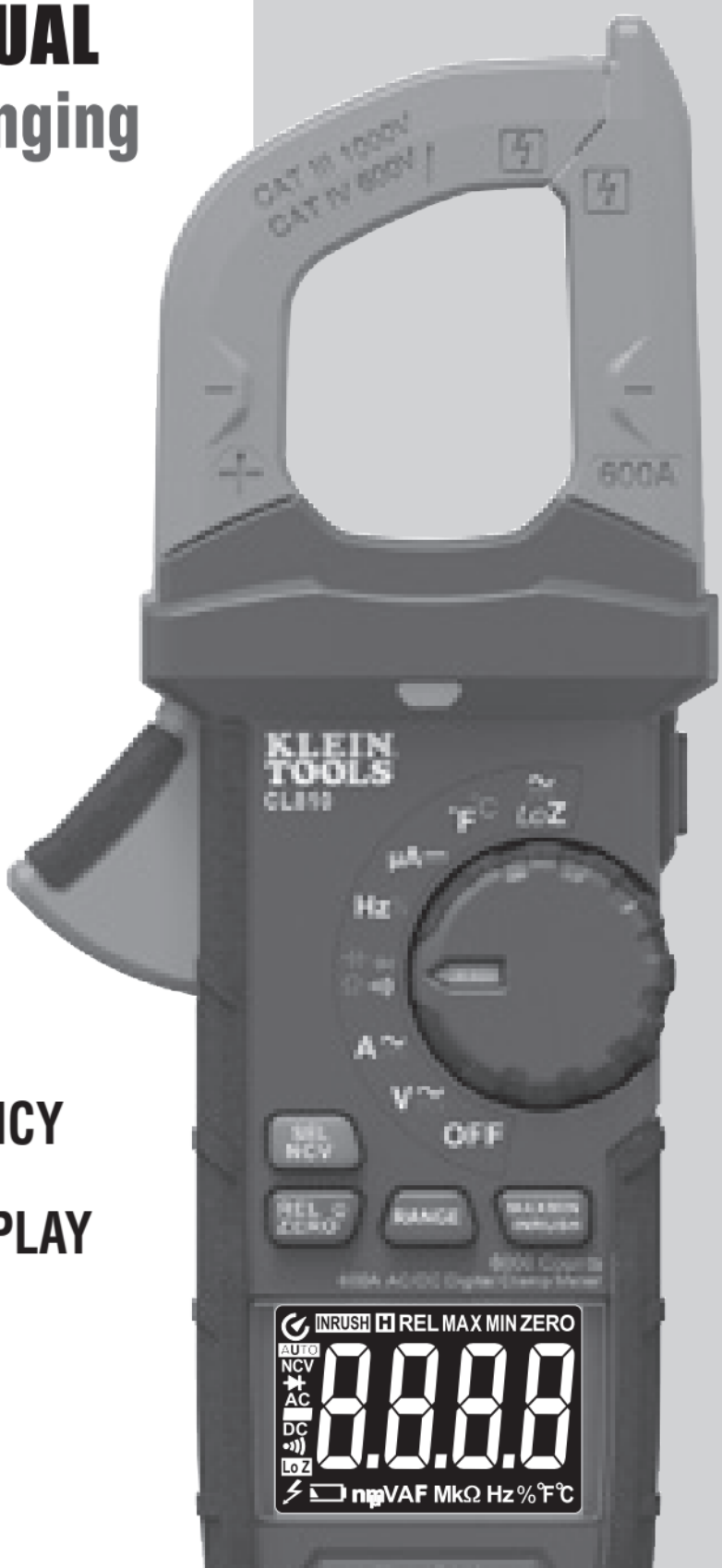
True RMS

Measurement Technology

-40° – 1832°F
(-40° – 1000°C)

- NON-CONTACT VOLTAGE TESTER
- LOW IMPEDANCE
- DATA & RANGE HOLD
- AUDIBLE CONTINUITY
- DIODE TEST
- CAPACITANCE & FREQUENCY
- TRANSFLECTIVE REVERSE-CONTRAST DISPLAY
- LIGHTED DIAL

1000V ⎓ ≈
600A ⎓ ≈



60MΩ

2 m

IP40

TRMS | Ṽ | Ã | Ω | mṼ | •))) | μA | NCV | °F °C | AUTO | RANGE | HOLD | ▶| | ⊣⊢ | LOW Z | Hz % | Ã | MAX/MIN | APO | 6000 LCD

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TOUGH METER

CE

UK CA

C ETL US LISTED

Intertek 5000573

KLEIN TOOLS®

KLEIN EST. 1857 TOOLS

CAT IV 600V

CAT III 1000V

GENERAL SPECIFICATIONS

Klein Tools CL810 is an automatically ranging true root mean square (TRMS) digital clamp-meter that measures AC/DC current via the clamp, measures AC/DC voltage, resistance, continuity, frequency, inrush, capacitance, and tests diodes via test-leads, and temperature via a thermocouple probe. It also features a Low Impedance (LoZ) mode for identifying and eliminating ghost or stray voltages, transflective reverse-contrast display, and lighted dial.

- **Environment:** Indoor: Do not expose to moisture, rain or snow.
- **Operating Altitude:** 6562 ft. (2000m)
- **Relative Humidity:** <80% non-condensing
- **Operating Temp:** 32° to 122°F (0° to 50°C)
- **Storage Temp:** 14° to 140°F (-10° to 60°C)
- **Accuracy:** Values stated at 65° to 83°F (18° to 28°C)
- **Temp Coefficient:** 0.1 × (Quoted Accuracy) per °C above 28°C or below 18°C, corrections are required when ambient working temp is outside of Accuracy Temp range
- **Auto Power-Off (APO):** After 5 minutes of inactivity (unless disabled)
- **Dimensions:** 9.06" × 3.47" × 1.65" (230 × 88 × 42 mm)
- **Weight:** 13 oz. (369 g) including batteries
- **Calibration:** Accurate for one year
- **Standards:** IEC EN 61010-1, 61010-2-032.
  Conforms to: UL STD 61010-1, 61010-2-032.
  Certified to: CSA STD C22.2 #61010-1, 61010-2-032.
  Intertek 5000573
- **Pollution degree:** 2
- **Accuracy:** ± (% of reading + # of least significant digits)
- **Drop Protection:** 6.6 ft. (2m)
- **Safety Rating:** CAT IV 600V, CAT III 1000V, Class 2, Double insulation

  CAT III: *Measurement category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.*

  CAT IV: *Measurement category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.*
- **Electromagnetic Environment:** IEC EN 61326-1. This equipment meets requirements for use in basic and controlled electromagnetic environments like residential properties, business premises, and light-industrial locations.

Specifications subject to change.

ELECTRICAL SPECIFICATIONS

Function	Range	Resolution	Accuracy	LoZ Accuracy
AC Voltage (V AC)	600mV	0.1mV	±(1.8% + 8 digits)	±(2.5% + 8 digits)
	6.000V	1mV	±(1.0% + 3 digits)	
	60.00V	10mV		
	600.0V	100mV		
	1000V	1V	±(1.2% + 5 digits)	
DC Voltage (V DC)	600mV	0.1mV	±(0.5% + 5 digits)	±(2.0% + 5 digits)
	6.000V	1mV		
	60.00V	10mV		
	600.0V	100mV	±(0.8% + 3 digits)	
	1000V	1V	±(1.0% + 3 digits)	

Input Impedance: 10MΩ **Frequency Range:** 50 to 400Hz
Maximum Input: 1000V AC RMS or 1000V DC
NOTE: *All AC voltage ranges are specified from 5% to 100% of range.*

AC Current (A AC)	60.00A	10mA	±(2.0% + 8 digits)
	600.0A	100mA	±(2.0% + 5 digits)
DC Current (A DC)	60.00A	10mA	±(2.0% + 8 digits)
	600.0A	100mA	±(2.0% + 5 digits)

Frequency Range: 50 to 60Hz

DC Microamps (DC µ)	200.0µA	0.1µA	±(1.0% + 5 digits)

Maximum Input: 1000V AC RMS or 1000V DC

Function	Range	Resolution	Accuracy
Resistance	600.0Ω	0.1Ω	±(1.2% + 5 digits)
	6.000kΩ	1Ω	
	60.00kΩ	0.01kΩ	
	600.0kΩ	0.1kΩ	
	6.000MΩ	1kΩ	
	60.00MΩ	10kΩ	±(2.0% + 10 digits)

Maximum Input: 1000V AC RMS or 1000V DC

Capacitance	60.00nF	0.01nF	±(3.5% + 10 digits)
	600.0nF	0.1nF	±(3.0% + 5 digits)
	6.000µF	0.001µF	
	60.00µF	0.01µF	
	600.0µF	0.1µF	
	6000µF	1µF	±(3.5% + 5 digits)

Maximum Input: 1000V AC RMS or 1000V DC

Temperature (Fahrenheit)	-40° to 10°F	1°F	±(1.2% + 7°F)
	11° to 1832°F		±(1.2% + 6°F)
Temperature (Celsius)	-40° to -12°C	1°C	±(1.2% + 4°C)
	-11° to 1000°C		±(1.3% + 3°C)

ELECTRICAL SPECIFICATIONS

Function	Range	Resolution	Accuracy
Frequency (Auto-Ranging)	1.000Hz to 9.999Hz	0.001Hz	±(1.0% + 5 digits)
	99.99Hz	0.01Hz	
	999.9Hz	0.1Hz	
	9.999kHz	1Hz	
	99.99kHz	10Hz	
	500.00kHz	100Hz	

Sensitivity: >2V to 220V RMS
Maximum Input: 1000V AC RMS or 1000V DC

Duty Cycle	1.0% to 99.9%	0.1%	±(1.2% + 2 digits)

Pulse width: >100µs, <100ms **Frequency width:** 5Hz to 10kHz
Sensitivity: >2V to 220V RMS **Maximum Input:** 1000V DC or 1000V AC RMS

Inrush Current	600.0A	100mA	±(3.0% + 8 digits)

Frequency Range: 50 to 60Hz **Detection Range:** >2A

OTHER MEASUREMENT APPLICATIONS

***Maximum Input:** 1000V AC RMS or 1000V DC*

- **Diode Test:** Max. 1.5mA, open circuit voltage ~3.2V DC
- **Continuity Check:** Audible signal <50Ω, test current <1.5mA
- **Sampling Frequency:** 4 samples per second
- **Low Impedence (Low Z):** Input impedence >3kΩ, Max input 1000V AC RMS or 1000V DC RMS
- **Auto Power-Off:** After ~5 minutes of inactivity
- **Overload:** "OL" indicated on display, overload protection 1000V in all settings
- **Polarity:** "-" on display indicates negative polarity
- **Display:** 3-5/6 digit, 6000 Count LCD

⚠ WARNINGS - GENERAL

To ensure safe operation and service of the meter, 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.
- Use only with CAT III 1000V/CAT IV 600V rated test leads or better.
- Ensure meter leads are fully seated, and keep fingers away from the metal probe contacts when making measurements.
- Use caution when working with voltages above 25V AC RMS or 60V DC. Such voltages pose a shock hazard.
- To avoid false readings that can lead to electrical shock, replace batteries when a low battery indicator appears.
- Do not attempt to measure resistance or continuity on a live circuit.
- Always adhere to local and national safety codes. Use personal protective equipment to prevent shock and arc blast injury where hazardous live conductors are exposed.
- To avoid risk of electric shock, disconnect leads from any voltage source before removing battery door.
- To avoid risk of electric shock, do not operate meter while battery door is removed.

⚠ WARNINGS - NCV FUNCTION

- When NCV Function is initiated, a blinking or steady red glow and an audible beep indicate voltage present, and the screen will display the corresponding sensitivity level (1 to 4 bars) when voltage is detected. If no indication, voltage could still be present.
- Before and after each use of the NCVT, verify operation by testing a known working circuit that is within the rating of this unit.
- Never assume neutral or ground wires are de-energized. Neutrals in multi-wire branch circuits may be energized when disconnected and must be retested before handling.
- The NCV tester WILL NOT detect voltage if:
  - The wire is shielded.
  - The operator is not grounded or is otherwise isolated from an effective earth ground.
  - The voltage is DC.
- The NCV tester MAY NOT detect voltage if:
  - The user is not holding the tester.
  - The user is insulated from the tester with a glove or other materials.
  - The wire is partially buried or in a grounded metal conduit.
  - The tester is at a distance from the voltage source.
  - The field created by the voltage source is blocked, dampened, or otherwise interfered with.
  - The frequency of the voltage is not a perfect sine wave between 50 and 60Hz.
  - The tester is outside of operation conditions (listed in Specifications section).
- Operation may be affected by differences in socket design and insulation thickness and type; tester may not be compatible with some types of standard or tamper resistant (TR) electrical outlets.
- Do not apply to uninsulated hazardous live conductors.
- Detection above 50V is specified under “normal” conditions as specified below. The tester may detect at a different threshold at different conditions, or may not detect at all unless:
  - The tip of the tester is within 0.25" of an AC voltage source radiating unimpeded.
  - The user is holding the body of the tester with his or her bare hand.
  - The user is standing on or connected to earth ground.
  - The air humidity is nominal (50% relative humidity).
  - The tester is held still.

SYMBOLS ON METER

⎓	AC/DC Current	Ω	Resistance (in Ohms)
NCV	Non-Contact Voltage tester	•))	Audible Continuity
⧈	Double Insulated Class II	µA⎓	DC Microamps
⚠	Warning or Caution	⚠	Risk of Electrical Shock
ϟ	Suitable for uninsulated hazardous live conductors	i	Read Instructions
▶|	Diode	LoZ	Low Impedance
Hz	Frequency	⊣⊢	Capacitance
V	Voltage (Volts)	%	Duty-cycle
°F °C	Temperature (Fahrenheit / Celsius)	A	Amperage (Amps)
+	Positive	–	Negative
COM	Common	SEL	Select
☼	Backlight Brightness	⏚	Ground
☼	Work Light	OFF	Power Off
INRUSH	Inrush Current	MAX MIN	Maximum/Minimum Value

SYMBOLS ON LCD

AC	AC (Alternating Current)	DC	DC (Direct Current)
–	Negative Reading	H	Data Hold
AUTO	Auto Ranging	▶|	Diode
F	Farrads		Auto Power Off
NCV	Non-Contact Voltage Tester	•))	Audible Continuity
▭	Low Battery	°C	Degrees (Celsius)
°F	Degrees (Fahrenheit)	k	kilo (value x 10^3)
M	Mega (value x 10^6)	µ	micro (value x 10^{-6})
m	milli (value x 10^{-3})	V	Volts
n	nano (value x 10^{-9})	Ω	Ohms
A	Amps	ZERO	DC Current Zero Function
Hz%	Frequency/Duty Cycle	REL	Relative Mode
ϟ	Hazardous Voltage Indicator	INRUSH	Inrush
MIN	Minimum Value Hold	MAX	Maximum Value Hold
Lo Z	Low Impedence		

FEATURE DETAILS

NOTE: There are no user-serviceable parts inside meter.

1. 6000 Count LCD Display
2. Function Selector Switch
3. Clamp
4. "COM" Jack
5. "V / Ω / µA" Jack
6. "HOLD" / Worklight Button
7. "RANGE" Button
8. "MAX/MIN/INRUSH" Button
9. "REL/ZERO"/Brightness Button
10. Clamp Trigger (press to open clamp)
11. Arrow Markings
12. "SEL/NCV" Button
13. Test Lead Holder for Test Probe
14. NCV Sensing Antenna
15. Polarity Markings (for DC current)
16. Worklight
17. NCV Indicator
18. Magnetic Mount

FUNCTION BUTTONS

ON/OFF
To power ON the meter, rotate the Function Selector Switch (2) from the OFF setting to any measurement setting. To power OFF the meter, rotate the Function Selector Switch (2) to the OFF setting. By default, the meter will automatically power OFF after 5 minutes of inactivity. If the meter automatically powers OFF while in a measurement setting, rotate Function Selector Switch (2) to any other setting, or press any button to power back ON to resume the same function setting. To deactivate the power OFF functionality press and hold the "SEL/NCV"button (12) before powering ON from the OFF setting. When auto power OFF is deactivated, the Auto Power Off icon will not be visible in the display. ***NOTE:*** *Auto power-off is the default setting and must be deactivated each time the meter is powered ON.*

"SEL/NCV" BUTTON (FOR SECONDARY FUNCTIONS)
The "SEL/NCV" Button (12) activates the secondary function for each application accessible by the function selector switch (2). For current, voltage, and low impedance it toggles between AC and DC, for the other functions it switches between continuity, resistance, capacitance, and diode test mode, and between Hz and %, and between °F and °C. The default function for each application is printed on the meter in white; the secondary function or functions for each setting is printed on the meter in orange.

"SEL/NCV" BUTTON (FOR NCV TESTING)
Press and hold the "SEL/NCV" Button (12) to enter Non-contact Voltage Testing (NCV) mode to test for presence of AC voltage. The NCV icon and "**EF**" will be present on the display. Approach the conductor under test leading with the sensing antenna (14). In the presence of AC voltage, the red NCV light (17) will flash, audible signals (beeps) will sound, and dashes will appear on the display. As the NCV sensing antenna (14) approaches the voltage source, more dashes will be presented on the display and the frequency of the audible sound will increase. Release the "SEL/NCV" Button (12) to exit NCV testing mode
NOTE: *Only voltages of 65V AC or greater will be detected.*

DATA HOLD & WORKLIGHT
Press the "HOLD" / Worklight Button (6) to hold the measurement on the display. Press again to release the display to return to live measuring. Press and hold to turn on the worklight.

RELATIVE MODE
REL Measurement: Press the "REL/ZERO"/Brightness Button (9) to initiate measurement relative to the current reading. The REL icon will be present on the display. Subsequent measurements are displayed relative to the original measurement. (Applies to Voltage, AC Current, Capacitance, DC µA, and Temperature). Press the "REL/ZERO"/Brightness Button (9) again to exit relative mode.

DC ZERO Function: When measuring DC current with the clamp, press the "REL/ZERO"/Brightness Button (9) to activate the DC current zero function. This will set the display to zero by subtracting the current value as an offset. The ZERO icon will be present on the display. Press the "REL/ZERO"/ Brightness Button (9) again to exit DC current zero mode. Press and hold the "REL/ZERO"/Brightness Button (9) in any mode to increase or decrease the brightness of the LCD backlight. ***NOTE:*** *If the DC current range changes, the DC current ZERO function procedure must be repeated.*

FUNCTION BUTTONS

FUNCTION SELECTOR SWITCH BACKLIGHT
The function icons around the Function Selector Switch (2) will illuminate by default upon powering-ON the meter, and will stop illuminating after 3 minutes of inactivity. They will reilluminate upon pressing any button or rotating the Function Selector Switch (2).
NOTE: *To disable the dial backlight, press and hold the "REL/ZERO"/ Brightness Button button (9) when powering-ON the meter.*

RANGE
The meter defaults to auto-ranging mode AUTO. This mode automatically determines the most appropriate measurement range for the testing that is being conducted. To manually force the meter to measure in a different range, use the Range button (7).

1. Press the "RANGE" button (7) to manually select measurement range (AUTO is deactivated on the LCD). Repeatedly press the "RANGE" button (7) to cycle through the available ranges, stopping once the desired range is reached.
2. To return to auto-ranging mode, press and hold the "RANGE" button (7) for more than one second (AUTO is reactivated).

MAX/MIN
When the "MAX/MIN/INRUSH" button (8) is pressed, the meter keeps track of the Maximum and Minimum values.

1. When measuring, press the "MAX/MIN/INRUSH" button (8) to toggle between the Maximum value (MAX) and the Minimum value (MIN). If a new Maximum or Minimum occurs, the display will update with the new value.
2. Press and hold the "MAX/MIN/INRUSH" button (8) for more than one second to return to normal measuring mode.

INRUSH
1. Rotate the Function Selector switch (2) to the Current **A** ≃ setting and press the "MAX/MIN/INRUSH" button (8) prior to an inrush event to test for inrush current. While the meter monitors current waiting for the inrush event, "----" will be visible on the display.
2. Press and hold the "MAX/MIN/INRUSH" button (8) for more than one second to return to normal measuring mode.

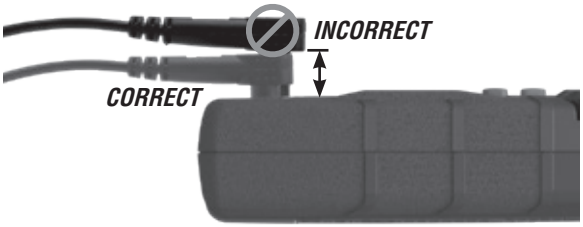
NOTE: *While in AC current mode, inrush is the default measurement when pressing the "MAX/MIN/INRUSH" button (8). In all other modes, MAX/MIN is the default measurement.*

NOTE: *Inrush mode takes a measurement every 20 milliseconds. The display initially updates 100 milliseconds after entering inrush mode. After that, the display updates every 300 milliseconds.*

OPERATING INSTRUCTIONS

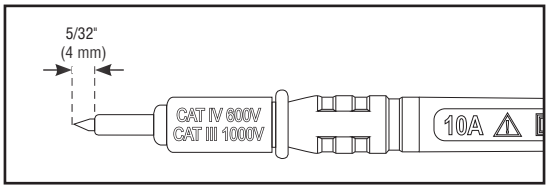
CONNECTING TEST LEADS

Do not test if leads are improperly seated. This could result in intermittent display readings. To ensure proper connection, firmly press leads into the input jack completely.



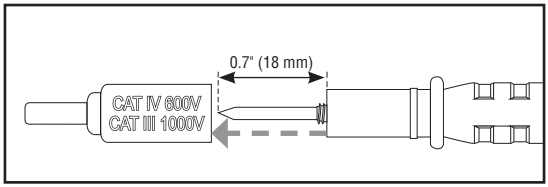
TESTING IN CAT III / CAT IV MEASUREMENT LOCATIONS

Ensure the test lead shield is pressed firmly in place. Failure to use the CATIII / CATIV shield increases arc-flash risk.



TESTING IN CAT II MEASUREMENT LOCATIONS

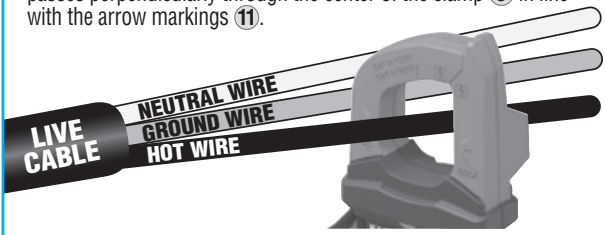
CAT III / CAT IV shields may be removed for CAT II locations. This will allow testing on recessed conductors such as standard wall outlets. Take care not to lose the shields.



OPERATING INSTRUCTIONS

AC/DC CURRENT (LESS THAN 600A)

AC Current is measured by pressing the clamp trigger ⑩ to open the clamp ③ and placing it around a current-carrying wire. When measuring, care should be taken to ensure that the clamp ③ is completely closed with trigger ⑩ fully released, and that the wire passes perpendicularly through the center of the clamp ③ in line with the arrow markings ⑪.



NOTE: *Current measurement can be made by clamping around single conductors, but not cables containing both live and neutral wires. In this case a line splitter is required, Klein Cat. No. 69409 is recommended.*

To measure current:

1. Rotate the Function Selector Switch ② to the AC/DC current **A** ≂ setting.

NOTE: *The meter defaults to AC measurement. Press the "SEL/NCV" button ⑫ to toggle between AC and DC modes. The AC or DC icon on the LCD indicates which mode is selected.*

2. Place clamp ③ around wire. When measuring DC current, align the polarity markings ⑮ on the clamp with the polarity of the wire to avoid negative readings. The current measurement will be shown in the display. The meter will auto-range to display the measurement in the most appropriate range.

⚠ ***Disconnect test leads when measuring with the clamp.***

NOTE: *If non-zero values are displayed prior to measuring in DC current mode, an offset correction is required. With meter in DC current mode, press and hold the "SEL/NCV" button ⑫ to activate the DC current ZERO function. Subsequent DC current measurements automatically subtract the offset correction for improved accuracy. If the DC current range changes, the DC current ZERO function procedure must be repeated.*

AC/DC VOLTAGE (LESS THAN 1000V)

1. Insert RED test lead into "V / Ω / µA" jack (5), and BLACK test lead into COM jack (4), and rotate function selector switch (2) to the AC/DC voltage V ≂ setting. The meter defaults to AC measurement. To measure DC, press the "SEL/NCV" button (12) to toggle between AC and DC modes. The AC or DC icon on the LCD indicates which mode is selected.

2. Apply test leads to the circuit to be tested to measure voltage. The meter will auto-range to display the measurement in the most appropriate range.

NOTE: *If "–" appears on the LCD, the test leads are being applied to the circuit in reverse. Swap the position of the leads to correct this.*

NOTE: *When in a voltage setting and the test leads are open, readings of order mV may appear on the display. This is noise and is normal. By touching the test leads together to close the circuit the meter will measure zero volts.*

NOTE: *The Hazardous Voltage Indicator will appear on the display when the voltage is >25V AC or >60V DC.*

AC/DC LoZ VOLTAGE (LESS THAN 1000V)

1. Insert RED test lead into "V / Ω / µA" jack (5), and BLACK test lead into COM jack (4), and rotate function selector switch (2) to the AC/DC LoZ voltage ≂ LoZ setting. The meter defaults to AC measurement. To measure DC, press the "SEL/NCV"button (12) to toggle between AC and DC modes. The AC or DC icon on the LCD indicates which mode is selected.

2. Apply test leads to the circuit to be tested to measure voltage. The meter will auto-range to display the measurement in the most appropriate range.

⚠ ***Do not attempt to measure voltages greater than 1000V in LoZ setting.***

CONTINUITY

1. Insert RED test lead into "V / Ω / µA" jack (5), and BLACK test lead into COM jack (4), and rotate function selector switch (2) to the Continuity/Resistance/Capacitance/Diode Test setting.

NOTE: *The meter defaults to Continuity testing in this mode. Ensure that the Continuity Testing icon is visible on the display. If not, press the "SEL/NCV"button (12) repeatedly until the icon is shown.*

2. Remove power from circuit.
3. Test for continuity by connecting conductor or circuit with test leads. If resistance is measured less than 50Ω, an audible signal will sound and display will show a resistance value indicating continuity. If circuit is open, display will show "OL".

⚠ ***DO NOT attempt to measure continuity on a live circuit.***

RESISTANCE MEASUREMENTS

1. Insert RED test lead into "V / Ω / µA" jack (5), and BLACK test lead into COM jack (4), and rotate function selector switch (2) to the Continuity/Resistance/Capacitance/Diode Test setting.

NOTE: *The meter defaults to Continuity testing in this mode. Press the "SEL/NCV"button (12) once to enter Resistance testing mode. The Resistance icon Ω will appear on the display.*

2. Remove power from circuit.
3. Measure resistance by connecting test leads to circuit. The meter will auto-range to display the measurement in the most appropriate range.

NOTE: *When in a Resistance setting and the test leads are open (not connected across a resistor), or when a failed resistor is under test, the display will indicate "OL". This is normal.*

⚠ ***DO NOT attempt to measure resistance on a live circuit.***

OPERATING INSTRUCTIONS

CAPACITANCE

1. Insert RED test lead into "V / Ω / µA" jack (5), and BLACK test lead into COM jack (4), and rotate the Function Selector Switch (2) Continuity/Resistance/Capacitance/Diode Test setting.

NOTE: *The meter defaults to Continuity testing in this mode. Press "SEL/NCV" button (12) twice to enter Capacitance testing mode. The* ***F*** *unit measurement icon will appear on the display.*

2. Remove power from circuit.
3. Measure capacitance by connecting test leads across the capacitor. The meter will auto-range to display the measurement in the most appropriate range.

Black lead Red lead

DIODE TEST

1. Insert RED test lead into "V / Ω / µA" jack (5), and BLACK test lead into COM jack (4), and rotate function selector switch (2) to the Continuity/Resistance/Capacitance/Diode Test setting.

NOTE: *The meter defaults to Continuity testing in this mode. Press the "SEL/NCV"button (12) three times to enter Diode testing mode. The Diode icon will appear on the display.*

2. Touch test leads to diode. A reading of 200-800mV on display indicates forward bias, "OL" indicates reverse bias. An open device will show "OL" in both polarities. A shorted device will show approximately 0mV.

Black lead Red lead

OPERATING INSTRUCTIONS

FREQUENCY / DUTY-CYCLE

1. Insert RED test lead into "V / Ω / µA" jack (5) and BLACK test lead into COM jack (4), and rotate function selector switch (2) to the Frequency/Duty-Cycle **Hz**% setting.

NOTE: *The meter defaults to Frequency testing in this mode. To enter Duty-Cycle testing mode, press the "SEL/NCV"button (12) once. Ensure that the appropriate icon (either* **Hz** *or* **%***) appears on the display.*

2. Measure by connecting test leads across the circuit.

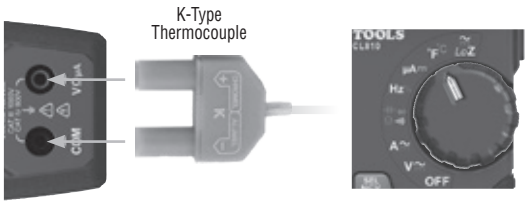
Black lead Red lead

TEMPERATURE

1. Insert thermocouple into the "V / Ω / µA" (5) and COM (4) jacks (observe polarity markings on thermocouple and meter), and rotate function selector switch (2) to the Temperature °**F**°C setting.

NOTE: *The meter defaults to Fahrenheit scale in this mode. To enter Celsius scale, press the "SEL/NCV"button (12) once. Ensure that the appropriate icon (either* °**F** *or* °**C***) appears on the display.*

2. To measure temperature, make contact between the thermocouple tip and the object being measured. When thermocouple tip and object are in thermal equilibrium, the measurement on the display will stabilize. The meter will auto-range to display the measurement in the most appropriate range.



⚠ ***Remove thermocouple before switching meter to other measurement functions.***

⚠ ***The thermocouple included with the original purchase is suitable for temperatures below 356°F / 180°C only. To measure higher temperatures, a thermocouple with the appropriate measurement range should be used.***

MAINTENANCE

BATTERY REPLACEMENT

When indicator is displayed on LCD, batteries must be replaced.

1. Remove screw from battery door.
2. Replace three AAA batteries (note proper polarity).
3. Replace battery door and fasten securely with screw.

⚠ ***To avoid risk of electric shock, disconnect leads from any voltage source before removing battery door.***

⚠ ***To avoid risk of electric shock, do not operate meter while battery door is removed.***

CLEANING

Be sure meter is turned off and wipe with a clean, dry lint-free cloth. ***Do not use abrasive cleaners or solvents.***

STORAGE

Remove the batteries when meter 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 General Specifications section, allow the meter to return to normal operating conditions before using.

FCC & IC COMPLIANCE

See this product's page at **www.kleintools.com** for FCC compliance information.
Canada ICES-003 (B) / NMB-003 (B)

WARRANTY

www.kleintools.com/warranty

DISPOSAL / RECYCLE

Do not place equipment and its accessories in the trash. Items must be properly disposed of in accordance with local regulations. Please see **www.epa.gov/recycle** for additional information.

CUSTOMER SERVICE

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