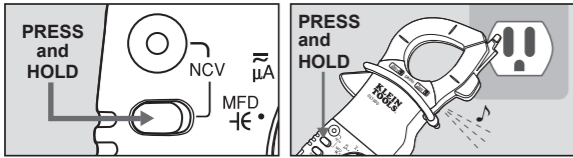


8. Non Contact Voltage (NCV): > 25V AC



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
F	Capacitance in Farads		Continuity Test
▲	Relative / Zero Mode	n	Nano 10 <sup>-9</sup>
µ	Micro 10 <sup>-6</sup>	m	Milli 10 <sup>-3</sup>
k	Kilo 10 <sup>3</sup>	M	Mega 10 <sup>6</sup>

ELECTRICAL SPECIFICATIONS

DC Voltage Measurement

Range	Resolution	Accuracy
400mV ~ 400V	0.1mV ~ 0.1V	± (0.5% + 4 digits)
1000V	1V	± (0.8% + 10 digits)

Overload Protection: 1000V

AC Voltage Measurement

Range	Resolution	Accuracy
400mV ~ 750V	0.1mV ~ 1V	± (2.0% + 5 digits)

Overload Protection: 750V RMS

Frequency Response: 40 to 400Hz

Minimum Voltage for Frequency Measurement: 200mV

Response: True RMS

Continuity Test

Overload Protection	Open Circuit Voltage
600V RMS	< 0.44V

Non Contact Voltage Detector

On Voltage
Appx. 25V AC

DC Current Measurement

Range	Resolution	Accuracy
400µA	0.1µA	± (1.2% + 3 digits)
2000µA	1µA	
40A	0.01A	± (2.5% + 15 digits)
400A	0.1A	± (1.5% + 8 digits)

Overload Protection:

- Voltage: 600V RMS
- Current: 2000µA

AC Current Measurement

Range	Resolution	Accuracy
400µA	0.1µA	± (2.0% + 5 digits)
2000µA	1µA	± (1.5% + 5 digits)
40A	0.01A	± (2.9% + 15 digits)
400A	0.1A	± (1.9% + 8 digits)

Overload Protection:

- Voltage: 600V RMS
- Current: 2000µA

Frequency: 45 to 400Hz

Minimum Current for Frequency Measurement: 400µA or 20A

Response: True RMS

Resistance Measurement

Range	Resolution	Accuracy
400Ω ~ 4MΩ	0.1Ω ~ 0.001MΩ	± (1.0% + 4 digits)
40MΩ	0.01MΩ	± (2.0% + 4 digits)

Overload Protection: 600V RMS

Capacitance Measurement

Range	Resolution	Accuracy
40nF ~ 4000µF	0.01nF ~ 1µF	± (3.5% + 6 digits)

Overload Protection: 600V RMS

Frequency Measurement

Range	Resolution	Accuracy
9.999Hz ~ 999.9kHz	0.001Hz ~ 0.1kHz	± (0.1% + 4 digits)

Overload Protection: 600V RMS

Duty Cycle Measurement

Range	Resolution	Accuracy
0.1 ~ 99.9%	0.1%	± (0.2% per kHz + 0.1% + 5 digits)

Overload Protection: 600V RMS

Diode Test

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

WARRANTY

www.kleintools.com/warranty

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



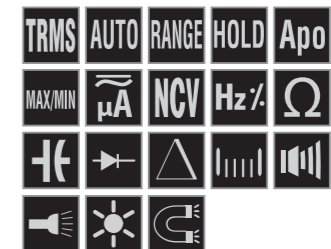
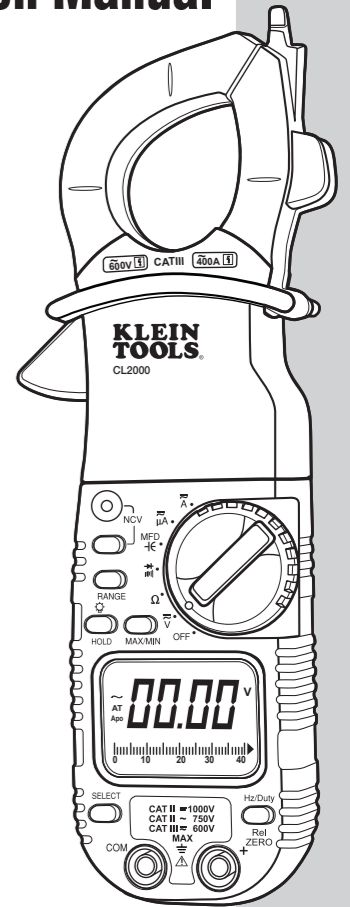
Caution: This symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal.

Instruction Manual

ENGLISH

- TRUE RMS
- AUTO / MANUAL RANGE
- NON CONTACT VOLTAGE TESTER
- RELATIVE / ZERO
- BAR GRAPH
- MAX / MIN / HOLD
- 3-3/4 DIGIT 3999 COUNT LCD
- BACKLIGHT
- WORKLIGHT

750V ~  
1000V ---  
400A ~



CUSTOMER SERVICE

KLEIN TOOLS, INC.  
450 Bond Street  
Lincolnshire, IL 60069  
www.kleintools.com

**KLEIN TOOLS**  
EST. 1857  
For Professionals... Since 1857<sup>®</sup> USA



Intertek  
3194551

# CL2000 Instruction Manual

## GENERAL SPECIFICATIONS

The Klein Tools CL2000 is a True RMS, auto-ranging clamp meter. It measures AC/DC voltage, AC/DC current, resistance, capacitance, frequency, and duty cycle. It can also test non-contact voltage, diodes, and continuity.

- **Operating Altitude:** 2000 meters
- **Humidity:** 80% max
- **Operating Temperature:** 0°C/32°F to 45°C/113°F
- **Storage Temperature:** 0°C/32°F to 60°C/140°F
- **Accuracy Temperature:** 18°C/64°F to 28°C/82°F
- **Temperature Coefficient:** 0.1\* (specified accuracy) / °C
- **Dimensions:** 8.875" x 3.375" x 1.5" (225 mm x 86 mm x 38 mm)
- **Weight:** 10.7 oz. (303 g)
- **Calibration:** Accurate for one year
- **Safety Rating:** CAT III 600V
- **Accuracy:** ± (% of reading + # of least significant digits)

## ⚠ WARNINGS

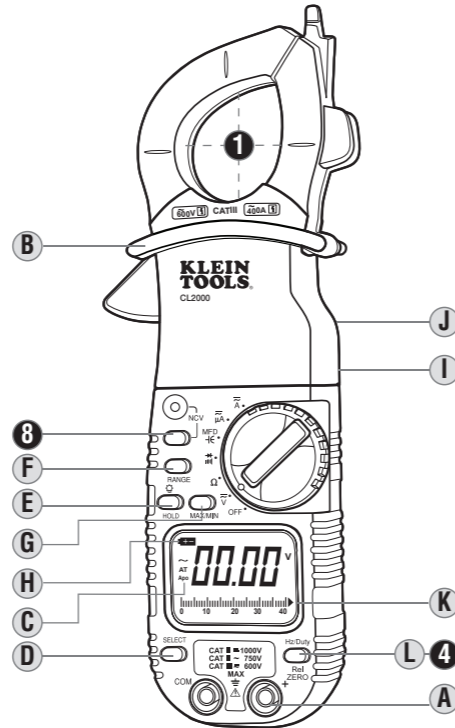
To ensure safe operation and service of the tester, follow these instructions. Failure to observe these warnings can result in severe injury or death.

- 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 individual protective equipment to prevent shock and arc blast injury where hazardous live conductors are exposed.

## 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 DETAILS



- A. Use CAT III rated leads or higher. Do not attempt to measure more than 1000V DC or 750V AC or 2000µA.**
- B. Keep hands below line when measuring high current levels.**
- C. Auto Power-Off (Apo)**
  - Device will power off after 30 minutes non-use.
  - Turn the dial or press a button to wake.
  - Disabled during Max / Min function.
  - Holding Select button while turning on disables Auto Power-Off.
- D. Select Functionality Button**
  - Switch between AC and DC.
  - Switch between and .
- E. Hold / Backlight / Worklight**
  - Press to hold the current input on the display.
  - Press again to return to live reading.
  - Press for 2 seconds to enable / disable lights.
  - Using lights drains the battery significantly.
- F. Auto / Manual Range**
  - 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.
- G. Max / Min Hold**
  - 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.
- H. I. Battery Replacement**
  - When indicator is displayed on the LCD, batteries must be replaced.
  - Remove the back screw and replace 2 x AAA batteries.

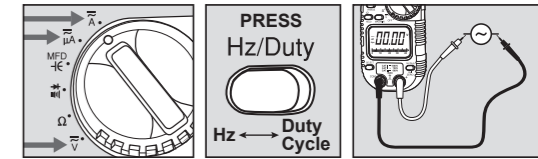
- J. Magnetic Back**
  - Attach instrument to metal for hands-free use.
- K. Bar Graph**
  - The bar graph shows an approximate analog representation of a measurement.
  - The bar graph responds much faster than the digital display.
  - The scale of the bar graph is zero to the maximum reading of the selected range.
- L. Relative Reading / Zero Mode**
  - Press for 2 seconds to enable/disable mode and store reading.
  - Display will show the difference between the stored reading and the live measurement.

## FUNCTION INSTRUCTIONS

- AC/DC Current (large): < 400A**  
**Features:** **HOLD** **RANGE** **MAX/MIN** **ZERO (DC)** **REL (AC)**  
  - Center wire in guides for best accuracy.
  - Opposing currents cancel. Use line-splitter (USA only) when necessary.
- AC/DC Current (small): < 2000µA**  
**Features:** **HOLD** **RANGE** **MAX/MIN** **ZERO (DC)** **REL (AC)**  
  - Select AC or DC current source.
  - Current above 2000µA will damage instrument.
- AC/DC Voltage: < 750V AC or 1000V DC**  
**Features:** **HOLD** **RANGE** **MAX/MIN** **REL**  
  - Select AC or DC voltage source.

- 4. Frequency (Hz) / Duty Cycle** (See Feature Details)

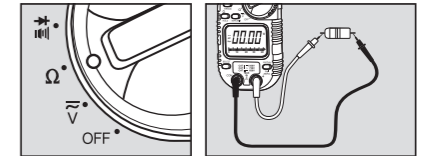
**Features:** **HOLD**



- Select , , or setting.
- Frequencies greater than 1MHz will display "0.000Hz".

- 5. Resistance: < 40MΩ**

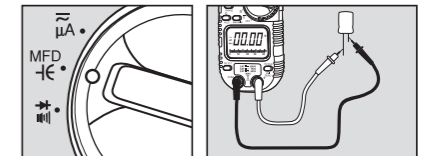
**Features:** **HOLD** **RANGE** **MAX/MIN**



- Do not measure resistance on a live circuit.

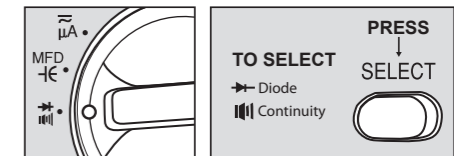
- 6. Capacitance: < 4000µF**

**Features:** **HOLD**



- Safely discharge capacitor before measurement.
- Reading may take up to 60 seconds for large capacitors.

- 7. Diode / Continuity**



**Diode Features:**

**HOLD** **MAX/MIN**

Display shows:

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

**Continuity Features:**

**HOLD** **MAX/MIN**

- Display shows resistance.
- Buzzer sounds if less than 30Ω.