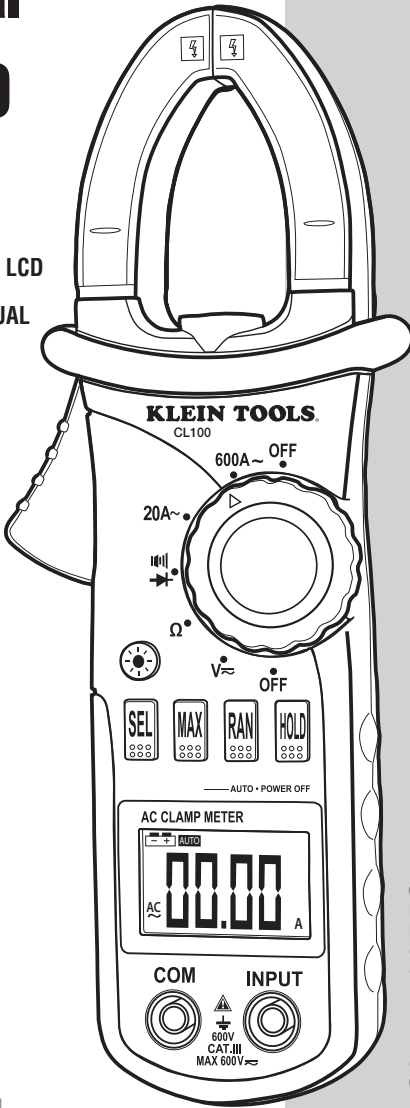


# Instruction Manual

## CL100

### ENGLISH

- 3-1/2 DIGIT 1999 COUNT LCD
- AUTO / MANUAL RANGE
- MAX HOLD
- DATA HOLD
- BACKLIGHT
- WORKLIGHT



# KLEIN TOOLS®

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### ENGLISH

## CL100 Instruction Manual

### GENERAL SPECIFICATIONS

The Klein Tools CL100 is a multi-featured clamp meter. It measures AC/DC voltage, AC current, and resistance. It can also test diodes and continuity.

- **Operating Altitude:** 2000 meters
- **Relative Humidity:** 75% max
- **Operating Temperature:** 0°C/32°F to 40°C/104°F
- **Storage Temperature:** -10°C/10°F to 50°C/122°F
- **Accuracy Temperature:** 18°C/64°F to 28°C/82°F
- **Temperature Coefficient:** 0.1\* (specified accuracy)/°C
- **Sampling Frequency:** 2.5 samples per second
- **Dimensions:** 8.2" x 3.0" x 1.4"
- **Weight:** 9.9 oz.
- **Calibration:** Accurate for one year
- **CAT Rating:** CAT III 600V
- **Accuracy:** ± (% of reading + # of least significant digits)

### ⚠ WARNINGS

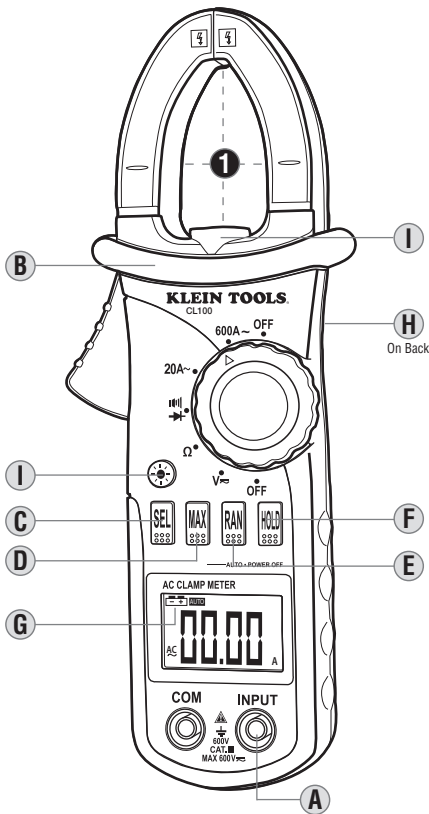
To ensure safe operation and service of the tester, follow these instructions. Failure to observe these warnings can result in severe injury or death.

- 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 600V or any current on lead input.
- B. Keep hands below line when measuring high current levels.**
- C. Select Functionality Button**
  - Switch between AC and DC.
  - Switch between  $\rightarrow$  and  $\parallel$ .
- D. Max Hold**
  - Press to hold the maximum value on the display.
  - Press again to return to live reading.
- E. Auto/Manual Range**
  - Press repeatedly to cycle through manual ranges.
  - Hold for 2 seconds to return to auto ranging mode.
  - **AUTO** is displayed on LCD only during auto ranging mode.
- F. Data Hold**
  - Press to hold the current input on the display.
  - Press again to return to live reading.
- G. H. Battery Replacement**
  - When  $\text{---}+$  indicator is displayed on the LCD, batteries must be replaced.
  - Remove the back screw and replace 3 x AAA batteries.

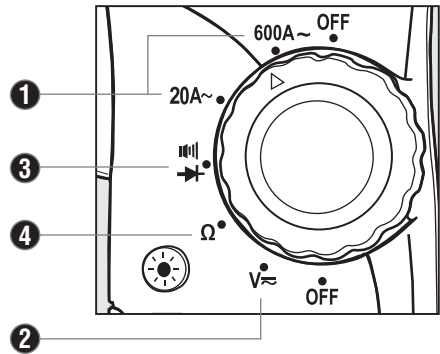
I. Backlight/Worklight

- Press button to activate worklight and backlight.
- Lights will turn off automatically after 15 seconds.
- Worklight only operates during AC current measurement.
- Using lights drains the battery significantly.

Auto Power-Off

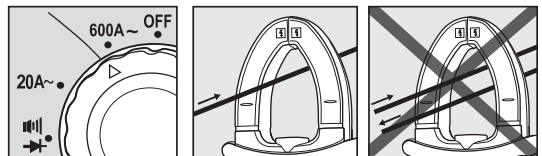
- Device will power off after 15 minutes non-use.
- Turn the dial or press a button to wake.
- Press the **HOLD** button while turning on to disable Auto Power-Off feature.

FUNCTION INSTRUCTIONS



1. AC Current: < 600A

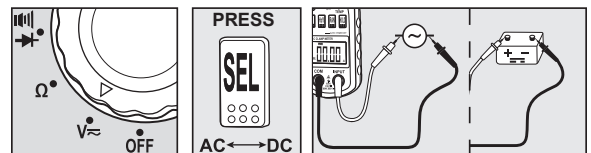
Features: **HOLD** **MAX** **RANGE** **WORKLIGHT**



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

2. AC/DC Voltage: < 600V

Features: **HOLD** **MAX** **RANGE**

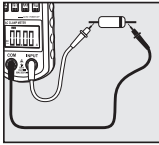


- Select AC or DC voltage source.

3. Diode / Continuity

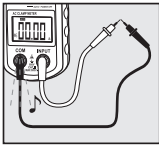


Diode Features: **HOLD**



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

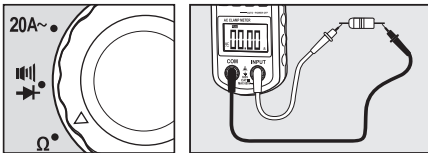
Continuity Features: **HOLD**



- Display shows resistance.
- Buzzer sounds if less than 60Ω.

4. Resistance: < 20MΩ

Features: **HOLD** **RANGE**



- **⚠ Do not** measure resistance on a live circuit.

SYMBOLS USED ON LCD

	AC Measurement		DC Measurement
	Negative DC Value	<b>MAX</b>	Maximum Reading
	Low Battery	<b>AUTO</b>	Auto Range Active
	Hold Active	<b>A</b>	Current in Amps
	Voltage Measurement		Diode Test
	Resistance in Ohms		Continuity Test
<b>m</b>	Milli 10 <sup>-3</sup>	<b>k</b>	Kilo 10
<b>M</b>	Mega 10 <sup>6</sup>		

ELECTRICAL SPECIFICATIONS

DC Voltage Measurement

Range	Resolution	Accuracy
200mV	0.1mV	± (0.8% + 2 digits)
2V	0.001V	
20V	0.01V	
200V	0.1V	± (1.0% + 2 digits)
600V	1V	

Overload Protection:

- **200mV range:** 250V DC / AC RMS
- **2V-600V ranges:** 600V DC / AC RMS

Input Impedance: 10MΩ.

AC Voltage Measurement

Range	Resolution	Accuracy
200mV	0.1mV	± (1.0% + 10 digits)
2V	0.001V	± (1.0% + 5 digits)
20V	0.01V	
200V	0.1V	
600V	1V	± (1.5% + 5 digits)

Overload Protection:

- **200mV range:** 250V DC / AC RMS
- **2V-600V ranges:** 600V DC / AC RMS

Input Impedance: 10MΩ

Response: Averaging

AC Current Measurement

Range	Resolution	Accuracy
2A	0.001A	± (3.5% + 20 digits) ≤ 0.5A
2A	0.001A	± (3.0% + 10 digits) > 0.5A
20A	0.01A	± (3.0% + 10 digits)
200A	0.1A	± (2.5% + 10 digits)
600A	1A	± (1.5% + 5 digits)

Frequency Range: 50 to 60Hz

Response: Averaging

Resistance Measurement

Range	Resolution	Accuracy
200Ω	0.1Ω	± (1.2% + 2 digits)
2kΩ	0.001kΩ	
20kΩ	0.01kΩ	
200kΩ	0.1kΩ	
2MΩ	0.001MΩ	± (2.0% + 5 digits)
20MΩ	0.01MΩ	

Overload Protection: 250V

Open Circuit Voltage: 0.25V

**Diode Test**

Forward DC Current	Resolution	Reverse DC Voltage
Appx. 1mA	0.001V	Appx. 1.5V

**Continuity Test**

Overload Protection	Resolution	Open Circuit Voltage
250V	0.1m $\Omega$	Appx. 0.45V

**WARRANTY**

This product is warranted to be free from defects in materials and workmanship for a period of two years from the date of purchase. During this warranty period, Klein Tools has the option to repair or replace or refund the purchase price of any unit which fails to conform to this warranty under normal use and service. This warranty does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect, or improper maintenance. Batteries and damage resulting from failed batteries are not covered by warranty. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. Klein Tools 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.

Some states or countries laws vary, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. If your Klein product requires repair or for information on how to exercise your rights under the terms of this warranty, please contact Klein Tools at 1-877-775-5346.

**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.

**CUSTOMER SERVICE**

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 Lincolnshire, IL 60069  
**1-877-283-6808**  
**www.kleintools.com**