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Klein Tools CL800 Digital Clamp Meter Instruction Manual

Model: CL800

1. INTRODUCTION

The Klein Tools CL800 is an automatically ranging True Root Mean Squared (TRMS) digital clamp meter designed for professional electricians and DIY enthusiasts. This versatile tool measures AC/DC voltage, resistance, continuity, frequency, capacitance, and tests diodes via test-leads. It also measures temperature via a thermocouple probe and features a Low Impedance (LoZ) mode for identifying and eliminating ghost or stray voltages. Built for durability, the CL800 is engineered to withstand demanding jobsite conditions.



Figure 1: Klein Tools CL800 Digital Clamp Meter highlighting its True RMS measurement technology, voltage, current, resistance, temperature ranges, 2m drop protection, IP40 ingress protection, and CAT III/CAT IV safety ratings.

2. SAFETY INFORMATION

WARNING: Read, understand, and follow all instructions, cautions, and warnings attached to and/or packed with all test and measurement devices before each use.

- Do not attempt to measure resistance or continuity on live circuits.
- Before each use, verify meter operation by measuring a known voltage or current.
- 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.

3. SETUP

3.1. Battery Installation

The CL800 requires 2 AAA batteries (included). To install or replace batteries:

1. Ensure the meter is OFF.
2. Locate the battery compartment on the back of the meter.
3. Use a screwdriver to open the battery cover.
4. Insert the batteries, observing correct polarity (+/-).
5. Replace the cover and secure it with the screw.

3.2. Connecting Test Leads

The meter comes with test leads. Connect them to the appropriate jacks:

- The black lead connects to the COM (Common) jack.
- The red lead connects to the VΩHz%Temp jack for most measurements (voltage, resistance, frequency, temperature, capacitance, diode).



Figure 2: Top view of the Klein Tools CL800, illustrating the input jacks for connecting test leads. The black COM jack and the red VΩHz%Temp jack are clearly visible.

4. OPERATING INSTRUCTIONS

The CL800 features a rotary dial to select measurement functions and buttons for additional settings. The backlit LCD display provides clear readings.



Figure 3: Front view of the Klein Tools CL800, displaying the LCD screen, rotary function dial, and control buttons for various measurement modes.

4.1. AC/DC Voltage Measurement

1. Turn the rotary dial to the **V~** (AC Voltage) or **V-** (DC Voltage) position. Use the **SEL** button to toggle between AC and DC if needed.
2. Connect the test leads to the circuit points you wish to measure.
3. Read the voltage value on the display.



Figure 4: An electrician uses the Klein Tools CL800 to safely measure voltage across terminals in a circuit breaker panel, demonstrating practical application.

4.2. AC/DC Current Measurement (Clamp)

1. Turn the rotary dial to the **A~** (AC Current) or **A-** (DC Current) position. Use the **SEL** button to toggle between AC and DC if needed.
2. Press the clamp trigger to open the jaws.
3. Enclose a single conductor (not a bundle of wires) within the clamp jaws.
4. Read the current value on the display.



Figure 5: An electrician utilizes the clamp function of the Klein Tools CL800 to measure current on a wire, with the backlit display providing visibility in dim conditions.

4.3. Resistance, Continuity, Diode, Capacitance, Frequency, Temperature

Select the corresponding function on the rotary dial. For resistance (Ω), continuity (||), diode (->|), and capacitance (---|---), connect the test leads to the component. For frequency (Hz%) and temperature ($^{\circ}\text{F}/^{\circ}\text{C}$), connect the leads or thermocouple probe as appropriate.



Figure 6: The Klein Tools CL800 is shown measuring temperature using its thermocouple probe, demonstrating its multi-functionality beyond electrical parameters.

4.4. Low Impedance (LoZ) Mode

The LoZ mode helps identify and eliminate ghost or stray voltages. Select the LoZ function on the dial and connect the test leads to the circuit. This mode provides a more accurate reading by presenting a low impedance to the circuit, which drains away ghost voltages.

4.5. Non-Contact Voltage Tester (NCVT)

To use the NCVT feature, press the **NCV** button. Hold the tip of the meter near a voltage source. The meter will indicate the presence of AC voltage with visual and/or audible alerts.

4.6. Backlit Display and Worklight

The CL800 features a backlit display for improved visibility in low-light conditions. It also includes an integrated worklight to illuminate the work area. Refer to the full user manual for specific button presses to activate these features.

5. MAINTENANCE

5.1. Cleaning

Wipe the meter with a dry, lint-free cloth. Do not use abrasive cleaners or solvents. Ensure the meter is off and disconnected from any circuits before cleaning.

5.2. Battery Replacement

Replace batteries when the low battery indicator appears on the display to ensure accurate readings and proper operation. Follow the steps in Section 3.1.

5.3. Storage

When not in use, store the meter and its accessories in the included carrying case in a cool, dry place away from direct sunlight and extreme temperatures.

6. TROUBLESHOOTING

- **Meter does not turn on:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate readings:** Verify correct function selection on the rotary dial and proper test lead connection. Ensure batteries are not low. For DC current, remember to zero out the display using the ZERO button before measurement.
- **Display shows "OL" (Overload):** The measured value exceeds the meter's range for the selected function. Select a higher range if available, or ensure the measurement is within the meter's capabilities.
- **Display is jumping or unstable:** This can occur with AC voltage due to floating voltages. Use the LoZ mode for more stable readings in such situations.
- **Negative symbol on DC voltage/current:** Indicates reversed polarity of the test leads. The magnitude of the reading is still correct.

7. SPECIFICATIONS

Feature	Specification
Manufacturer	Klein Tools
Part Number	CL800
Item Weight	12.5 ounces
Product Dimensions	9.09 x 3.82 x 1.54 inches
Item Model Number	CL800
Batteries	2 AAA batteries required (included)
Display Style	6000 Count LCD
Measurement Accuracy	Voltage Tester
Special Features	Low Battery Indicator, Auto Shut Off
Included Components	Carrying Case, 41" (1041.4 mm) Test Leads, Thermocouple with Adapter, and Batteries
Certification	Meets relevant industry standards (CAT III 1000V, CAT IV 600V)
Ingress Protection	IP40
Drop Protection	6.6-Foot (2 m)

8. WARRANTY AND SUPPORT

The Klein Tools CL800 Digital Clamp Meter comes with a 1-year manufacturer's warranty. For technical support, service, or warranty claims, please refer to the contact information provided in the original product packaging or visit the official Klein Tools website.

