

ENGLISH

ET250



INSTRUCTION MANUAL

Digital AC/DC Voltage & Continuity Tester

- AUTOMATICALLY SELECTS MEASUREMENT MODE
- MODERN SOLID-STATE DESIGN
- TEST GFCI PROTECTED CIRCUITS
- INTEGRATED WORKLIGHT
- BUILT-IN TEST LEAD HOLDERS
- BACKLIT LCD DISPLAY

600V \approx



ESPAÑOL pg. 9

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KLEIN TOOLS 

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GENERAL SPECIFICATIONS

Klein Tools ET250 is a solid-state, digital voltage and continuity tester. It measures AC/DC voltages up to 600V and tests for continuity. Additionally, the ET250 tests GFCI protected circuits to verify that the GFCI device is functioning appropriately. The tester includes a backlight and worklight for working in reduced ambient lighting conditions.

- **Operating Altitude:** ≤ 6562 ft. (2000 m)
- **Relative Humidity:** <80% non-condensing
- **Operating Temperature:** 5°F to 113°F (-15°C to 45°C)
- **Storage Temperature:** -4°F to 140°F (-20°C to 60°C)
- **Battery Type:** 3 x 1.5V AAA
- **Dimensions:** 6.06" x 2.33" x 1.64" (153.8 x 59.2 x 41.6 mm)
- **Weight:** 6 oz (170 g) without test leads
- **Calibration:** Accurate for one year
- **Standards:** Conforms to EN61326-1:2013, EN61326-2:2013, UL STD. 61010-1, 61010-2-030 and 61010-2-033.
Certified to CSA STD. C22.2 NO. 61010-1, 61010-2-030 and 61010-2-033
- **Pollution degree:** 2
- **Drop Protection:** 9.8 ft. (3m)
- **Ingress Protection:** IP53 (except test lead jacks, see **WARNINGS**)
- **Safety Rating:** CAT IV 600V, Class 2, Double insulation
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 EN61326-1:2013. 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.



99 Washington Street
Melrose, MA 02176
Phone 781-665-1400
Toll Free 1-800-517-8431



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ELECTRICAL SPECIFICATIONS

- **AC Voltage Range:** 2 – 600V AC RMS (45 – 400Hz)
- **DC Voltage Range:** 2 – 600V DC
- **Maximum Measurable Voltage:** 600V RMS
- **Resolution:** 1V
- **Accuracy:** $\pm(2\% + 2V)$
- **Test Current:** < 0.3mA at 120VAC RMS or 120 VDC
- **Continuity:** 0 – 270k Ω
- **GFCI Test:** >6mA via button
- **Nominal Voltage GFCI Testing:** 10-135V AC at 50/60Hz in 3-wire outlet
- **Auto-Detect:** Tester auto-detects and selects VAC / VDC / Continuity modes

Specifications subject to change.

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.

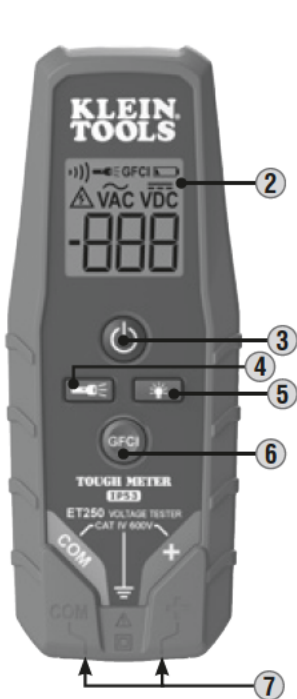
- Before each use verify tester operation by measuring a known voltage.
- Never use the tester on a circuit with voltages that exceed the category based rating of this tester.
- Do not use the tester during electrical storms or in wet weather.
- Do not use the tester or test leads if they appear to be damaged.
- Replacement test-leads should conform to EN 61010-031 and be rated CAT IV 600V, 10A, or better. Do not use lower rated test leads.
- Ensure tester leads are fully seated, and keep fingers behind the finger guards and 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 could lead to electric shock, replace batteries when a low battery indicator appears.
- 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.
- Tester is IP53 dust & water resistant. Following any contact with water, thoroughly dry tester and test lead jacks prior to subsequent use.

FEATURE DETAILS

Back of Tester



Front of Tester









NOTE: *There are no user-serviceable parts inside tester.*

1. Test Lead Holders
2. Backlit LCD Display
3. Power-On/Off Button
4. Worklight Button
5. Backlight Button
6. GFCI Test Button
7. Test Lead Jacks (bottom of tester)

SYMBOLS ON TESTER

+	Positive Lead Input	COM	Common / Negative Lead Input
	Double Insulated Class II		Ground
	Warning or Caution		Risk of Electrical Shock

SYMBOLS ON LCD

	Indicates presence of voltage > 50V AC or DC		AC Voltage
	Audible Continuity		DC Voltage
GFCI	Ground Fault Circuit Interrupter testing mode		Worklight
			Low Battery Indicator

FUNCTION BUTTONS

POWER-ON/OFF: Press the On/Off button to turn the tester on or off. The tester will automatically power-ON if test leads are applied to a circuit and it detects voltage >12V. The tester will automatically power-OFF following 15 minutes of inactivity to conserve battery life.

BACKLIGHT: Press the Backlight button to turn on/off the backlight. The backlight will automatically power off after 3 minutes of inactivity to conserve battery life.

WORKLIGHT: Press the Worklight button to turn on/off the worklight. The worklight will remain on until turned off or tester powers off.

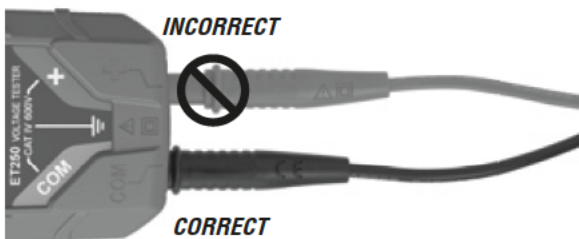
GFCI TEST: Press to perform a GFCI test. See *OPERATING INSTRUCTIONS* for details.

OPERATING INSTRUCTIONS

CONNECTING TEST LEADS

USE PROPER SAFETY-RATED TEST LEADS

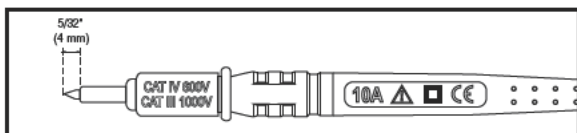
Connect test leads by inserting the black lead into the "COM" jack and the red lead into the "+" jack. Do not test if leads are improperly seated. Results could cause intermittent display readings. To ensure proper connection, firmly press leads into the input jack completely.



OPERATING INSTRUCTIONS

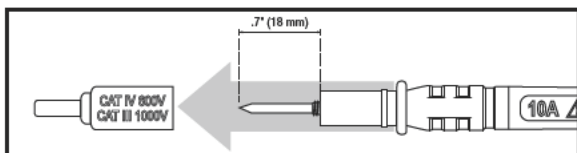
TESTING IN CAT III / CAT IV MEASUREMENT LOCATIONS

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.



AC/DC VOLTAGE (LESS THAN 600V)

Apply test leads to the system under test to measure voltage; the voltage measured will be reflected in the display. The tester will automatically detect the presence of AC or DC voltage and illuminate the appropriate icon in the display.



NOTE: Test-leads seated in the lead holders on the back of the tester are spaced correctly to test tamper-resistant US-style outlets.

⚠ CAUTION: The maximum testing voltage is 600V. 'OL' will show in the display if voltage in excess of 600V is detected. No other warnings will be delivered for voltages above 600V. Testing voltages above 600V should not be attempted under any circumstances.

OPERATING INSTRUCTIONS

CONTINUITY

Remove power from circuit. Test for continuity by applying test leads to the system being tested. The tester automatically enters continuity testing mode. If resistance $< 270k\Omega$ is detected, an audible signal will sound and the continuity icon ")))" will show in the display indicating continuity. If the circuit is open, "000" will show in the display.

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

GFCI TESTING

⚠ CAUTION: Check the GFCI Receptacle user manual for more information. Always contact a qualified electrician to resolve wiring problems. Operate the Test Button on the GFCI Receptacle. If the GFCI circuit does not trip, the receptacle is not operating properly.

⚠ CAUTION: To resolve wiring or GFCI concerns, contact a qualified electrician.

To test the functionality of a receptacle protected by a Ground Fault Circuit Interrupter (GFCI), apply leads to the hot/live and ground terminals. Press the GFCI Test button on the ET250 tester.

- If the GFCI device is wired properly, the GFCI will trip and the circuit will become de-energized. The ET250 tester will stop indicating voltage.
- If the GFCI receptacle is incorrectly wired, the power to the circuit will remain and the ET250 will continue to indicate voltage. Contact a qualified electrician to resolve wiring problems.

NOTE: The GFCI Test mode on this tester is deactivated in the presence of voltages $> 135V$.

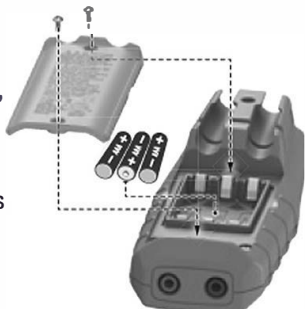


MAINTENANCE

BATTERY REPLACEMENT

When the Low Battery indicator shows low battery strength () , batteries must be replaced.

1. Remove 2 screws from battery door.
2. Replace 3 x 1.5V AAA batteries (note proper polarity).
3. Replace battery door and fasten securely with screws.



 **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 tester while battery door is removed.**

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

CLEANING

Disconnect test leads. Clean the instrument by using a damp cloth. **Do not use abrasive cleaners or solvents.**

STORAGE

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 instrument to return to normal operating conditions before use.

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 or www.ecycle.org for additional information.

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99 Washington Street
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