

INSTRUCTION MANUAL

Digital Circuit Breaker Finder

ET310

- VISUAL & AUDIBLE INDICATIONS
CLEARLY IDENTIFY
CORRECT BREAKER
- 90-120V AC
OPERATION
- DETERMINE WIRING
CONDITION AT
ELECTRICAL OUTLETS
- TEST GFCI DEVICES



GENERAL SPECIFICATIONS

The Klein Tools ET310 is a digital circuit breaker finder used to locate the correct circuit breaker in a panel to which an electrical outlet or fixture is connected. The transmitter is connected to the electrical outlet or fixture in the circuit while the receiver is used to scan the breakers in the circuit breaker panel.

- **Operating Voltage:** 90V to 120V AC, 50/60Hz
- **Operating Altitude:** 6562 ft. (2000m)
- **Relative Humidity:** <90% non-condensing
- **Operating Temp:** 32° to 122°F (0° to 50°C)
- **Storage Temp:** -4° to 122°F (-20° to 50°C)
- **Dimensions (transmitter docked in receiver):**
10.96" x 2.16" x 1.39" (278 x 55 x 35 mm)
- **Weight (transmitter, receiver, and batteries):** 7.2 oz. (204 g)
- **Battery (receiver):** 1 x 9V Alkaline (included)
- **Auto-Power Off (receiver):** Following 3 minutes of inactivity
- **Standards:**
 - Conforms to: UL STD 61010-1, 61010-2-030 1436.
 - Certified to: CSA STD C22.2 # 61010-1, 61010-2-030, 160.
- **Drop Protection:** 6.6 ft. (2m)
- **Ingress Protection:** IP40 dust resistant
- **Pollution Degree:** 2

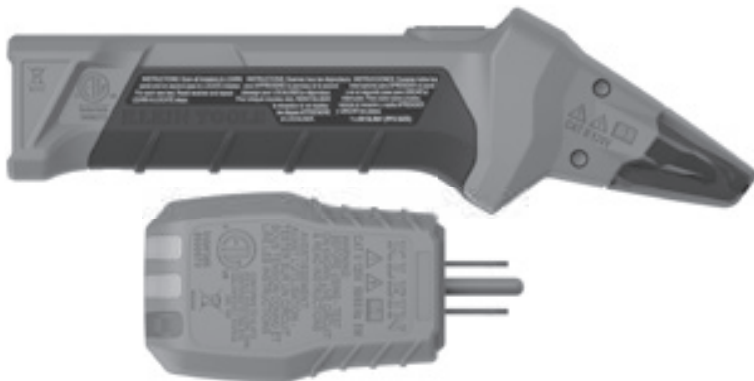


Conforms to: UL STD 61010-1, 61010-2-030 1436.
Certified to: CSA STD C22.2 # 61010-1, 61010-2-030, 160.

Specifications subject to change.

SYMBOLS ON BACK OF TESTER

	Risk of electric shock		This product has been independently tested by Intertek and meets applicable published standards.
	Warning or Caution		
	Read Instructions		



FEATURE DETAILS



1. Transmitter
2. Receiver
3. Power On/Off/Reset Button
4. Power On Indicator
5. Sensing Tip
6. Wiring Condition Indicators
7. Wiring Condition Codes
8. GFCI Test Button
9. Circuit Status Indicator
10. Battery Door
11. Transmitter Docking Receptacle

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

FIG. 1

- Illuminated Red
- Illuminated Orange
- Not Illuminated

INDICATORS	CONDITION INDICATED
	Open Ground
	Open Neutral
	Open Hot
	Hot & Ground Reversed
	Hot & Neutral Reversed
	Hot On Neutral with Open Hot
	GFCI Testing in Progress
	Correct Wiring

⚠ WARNINGS

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

- Failure to follow instructions could result in death or serious injury.
- Prior to use, always verify tester operation by testing on a known live and correctly wired electrical outlet.
- **DO NOT** use if the tester appears damaged in any way.
- The tester is intended for indoor use only.
- The tester is designed for use with 120V AC electrical systems. DO NOT connect to higher voltage electrical supplies.
- Other equipment or devices attached to the circuit being tested could interfere with the tester, clear the circuit before testing.
- This tester only detects common wiring problems. Always consult a qualified electrician to resolve wiring problems.
- If using accessories to connect to bare wires ensure that the circuit is not energized before inspecting, applying, or removing the transmitter.
- Exercise extreme caution around energized, bare wires, especially when working in or around an open breaker panel.

OPERATING INSTRUCTIONS

POWER ON/OFF

Press the Power button **3** to power on the receiver **2**, press and hold the Power button **3** to power off the receiver. A green indicator **4** illuminated in the Sensing Tip **5** and pulsing audible beep indicates that the unit is powered ON. The receiver will automatically power off following 3 minutes of inactivity. The transmitter **1** is powered by the circuit when inserted into an energized electrical outlet.

WIRING CONDITION

⚠ Prior to using this tester, always verify proper operation by testing the transmitter on a known energized and correctly wired electrical outlet.

Insert transmitter **1** into the electrical outlet being tested and compare the illuminated wiring condition indicators **6** with the wiring condition codes **7** printed on the transmitter (FIG. 1).

⚠ If the tester indicates that the outlet is not wired correctly, consult a qualified electrician.

NOTE: Conditions NOT indicated include but are not limited to quality of ground, multiple hot wires, reversal of neutral and ground conductors, dual open ground and neutral, and other combinations of defects.



NOTE: All appliances or equipment on the circuit being tested should be unplugged to help reduce the possibility of erroneous readings.

GFCI TEST

NOTE: Check the GFCI device's user manual for information on how the specific device operates prior to using this tester.

NOTE: All appliances or equipment on the circuit being tested should be unplugged to help reduce the possibility of erroneous readings.

NOTE: Not designed for testing 30mA ground-fault devices.

Insert the transmitter into the electrical outlet and note the wiring condition **6** & **7**.

⚠ If the tester indicates that the outlet is not wired correctly, DO NOT attempt to test the GFCI device. Consult a qualified electrician.

Press the GFCI button **8** on the transmitter **1** to test the GFCI device.

Following the test:

- If the GFCI device tripped, de-energizing the circuit, the wiring condition indicators **6** will all be off (Open Hot). Reset the GFCI device by pressing its reset button. After reset, the transmitter should indicate Correctly Wired **6** & **7**. The GFCI device appears to be functioning correctly.
- If the circuit remains Energized, the GFCI device didn't trip, indicating that it may be incorrectly wired, may not be installed correctly, or may not be functioning correctly. Consult a qualified electrician.

OPERATING INSTRUCTIONS

FINDING CIRCUIT BREAKERS

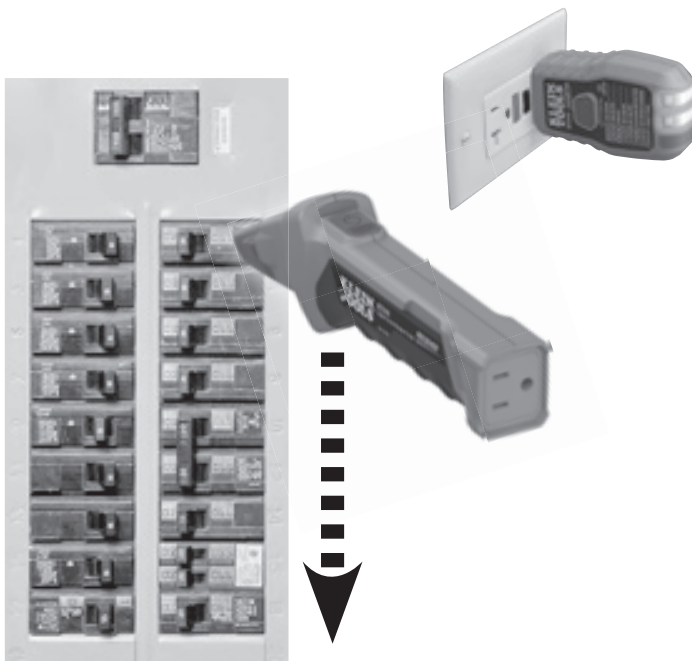
Insert the transmitter **1** into the electrical outlet and note the Wiring Condition **6** & **7**. If the transmitter indicates that the outlet is energized and correctly wired, prepare to scan the breakers in the breaker panel with the receiver **2**.

⚠ If the tester indicates that the outlet is not wired correctly, cease testing and consult a qualified electrician.

Power ON the receiver. Before approaching the electrical panel, push the Power On/Off/Reset button **3** once to reset the receiver. Position the receiver so that the sensing tip **5** is oriented perpendicular to the breakers in the panel. Slowly scan all breakers in the panel once, ignoring any audible or visual indications as the receiver is learning the panel.

Scan all breakers a second time. When the breaker connected to the circuit with the transmitter is approached, the frequency of the audible beeps will increase. When located, the audible beep will sound continuously, the circuit status indicator will illuminate red **9**, and the green indicator in the sensing tip **4** will turn off, indicating that the correct breaker has been found.

NOTE: Resetting the receiver erases prior scanning data stored from a previously 'learned' panel. Always reset the receiver away from the electrical panel to ensure that electrical signals are not being sensed during the reset operation.

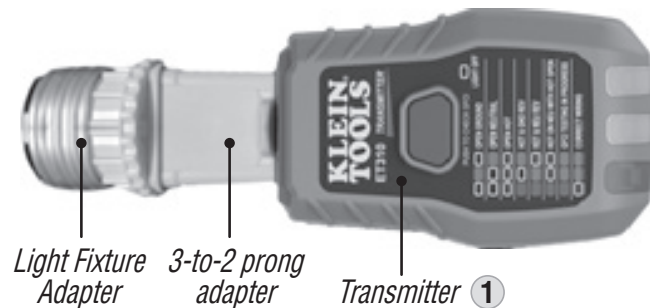


OPERATING INSTRUCTIONS

CONNECTING TO OTHER FIXTURES USING OPTIONAL ACCESSORIES (CAT. NO. 69411)

LIGHT SOCKET FIXTURES

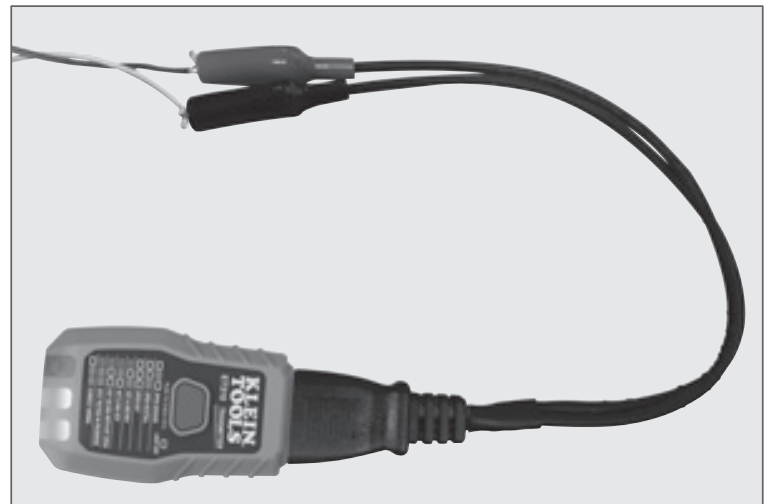
Screw the light fixture adapter into an empty light socket. Connect the transmitter **1** to the 3-to-2 prong adapter, and connect this to the light fixture adapter. The indicators on the transmitter will communicate an open ground wiring condition if the light socket is energized. Follow the instructions in the FINDING CIRCUIT BREAKERS section to find the correct circuit breaker.



BARE WIRES

The transmitter may be connected to bare wires using the outlet-to-alligator clips wire adapter. Carefully attach the alligator clips the correct wires. Insert transmitter into the outlet on the wire adapter. The indicators on the transmitter will communicate an open ground wiring condition if the wires are energized. Follow the instructions in the FINDING CIRCUIT BREAKERS section to find the correct circuit breaker.

⚠ Exercise extreme caution when working around energized bare wires.

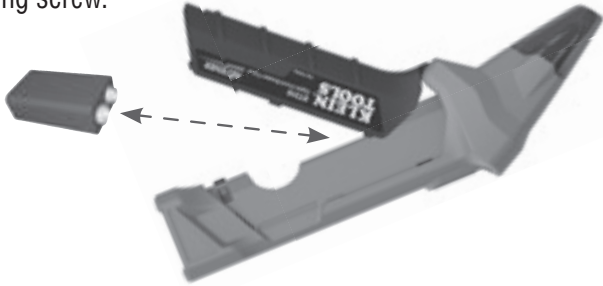


MAINTENANCE

BATTERY REPLACEMENT

When the Power-On indicator ④ blinks, the battery must be replaced.

1. Open the battery compartment door ⑩ by unscrewing the locking screw.
2. Remove exhausted 9V battery and dispose of appropriately.
3. Replace the 9V battery, close the battery door, and re-fasten the locking screw.



CLEANING

Be sure unit is turned off and wipe with a clean, dry lint-free cloth.

Do not use abrasive cleaners or solvents. Take care to keep the sensor lens clean at all times. If required, loose debris may be removed from lens using clean compressed air. Lens may also be cleaned using a soft cloth or cotton swab with water or rubbing alcohol only. Lens must be allowed to completely dry prior to use.

STORAGE

The transmitter ① may be docked in the transmitter receptacle ⑪ in the receiver ② for convenient storage. Remove the batteries when the tester will not be used 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 tester to return to normal operating conditions before using.

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.