

POWER TRACE™

INSTRUCTION MANUAL

PTL610



TASCO, INC.

HOW YOUR POWER TRACE™ OPERATES

The **POWER TRACE™** is composed of two primary components: the Receiver and the Transmitter. When the Transmitter is connected to any electrical line (up to 600 Volts), it draws a very small current that is used to create a composite signal. The signal is a microprocessor controlled combination of separate frequencies that create a specialized “signature” which is recognized by the Receiver.

To be received, the signal must have this exact combination of frequencies.

This feature greatly reduces the possibility of interference from electrical “noise” which is often caused by lamps, electrical equipment, appliances, florescent fixtures, or machinery that is on the same line.

The signal produced by the Transmitter generates a magnetic “signature” around the conductor being traced which matches that of the signal itself. This “signature” is present the entire length of the current path, including through breakers, fuses, switchgear, and transformers.

The Power Trace™ Receiver is “tuned” to pick up only that “signature” produced by the Transmitter. Both the Transmitter and Receiver are microprocessor controlled for maximum ease of use and accuracy.

WHY THE POWER TRACE™ POLYSIG™ COMPOSITE SIGNAL IS IMPORTANT

Many circuit tracers rely on a single transmitter frequency for tracing. This means that any noise in that frequency range will be received as a signal, causing confusion and possibly indicating the wrong breaker. By using the Polysig™ composite signal as well as a unique tone sequence, it is almost impossible to receive anything other than the true signal. The Polysig™ provides a much longer range capability than a single frequency. Because of the longer range and reduced noise, the transmitter operates with a very low signal current. This low current will not disrupt voltage sensitive electronics used in computers, telephone, security systems and other devices.

WHAT THE POWER TRACE™ CAN DO

TRACE:

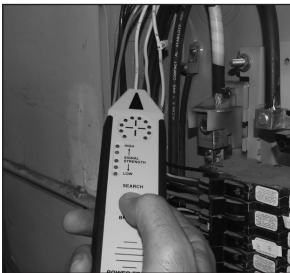
Power lines
Neutral lines
Ground lines
Wire in conduit
Underground wiring
Wire in walls and floors
Dead or shorted lines

FIND:

Circuit breakers
Fuses
Shorts to ground
Junction boxes
Relays
Breaker boxes

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SOME POWER TRACE™ USES



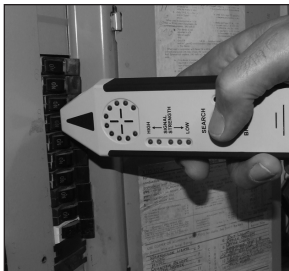
Finding Neutral Wires



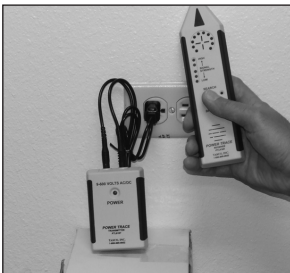
Finding Breaker Panel



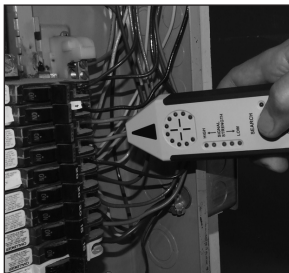
Tracing Conduit



Identifying Circuit Breakers



Tracing Wires in Walls



Tracing Live Wires

THIS TESTER IS DESIGNED FOR USE BY QUALIFIED ELECTRICIANS.

IMPORTANT SAFETY WARNINGS



⚠ WARNING

Read and understand this material before operating or servicing this equipment. Failure to understand how to safely operate this instrument can result in an accident causing serious injury or death.



⚠ WARNING

Electric shock hazard:
Contact with live circuits can result in severe injury or death.

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HOW TO USE YOUR POWER TRACE™

The Transmitter: Just plug into a 120 volt AC circuit. Use insulated clip leads for connection to other circuits. Do not connect to a voltage higher than 600 volts or the unit will be DAMAGED! The blinking LED indicates that the circuit is live and the transmitter is working.

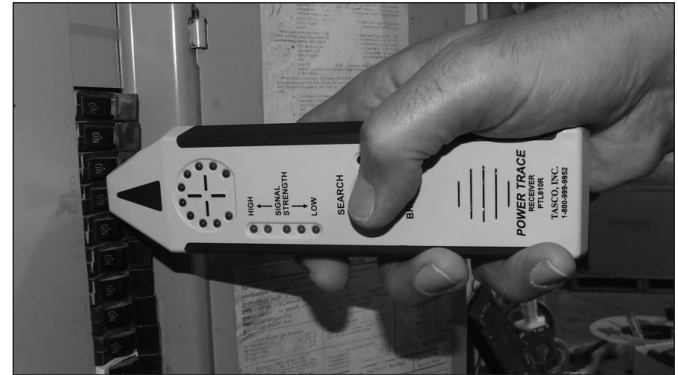
The Receiver: Turn the unit on by pushing and holding the “BREAK-ER” button. The corresponding LED will light to show the unit is operating. Use the BREAKER setting anytime you can physically touch the Receiver tip to the wire or breaker. For all other applications the SEARCH setting is typically used. It is important to note there is a distance overlap between the BREAKER and SEARCH settings. If you do not receive a signal on the BREAKER setting simply use the SEARCH setting instead. If the Receiver is too close to a line in the SEARCH setting, and it does not automatically adjust gain, then use the BREAKER setting instead. Select the range desired by pressing the button for BREAKER setting or pressing and sliding forward for SEARCH setting. Operate as indicated in the following instructions.

TRACING LIVE CIRCUITS AND LOCATING CIRCUIT BREAKERS

- 1) Plug the Transmitter into the receptacle. The LED will flash indicating the unit is sending signal and connected to an energized line.
- 2) Push the Receiver button. The unit will beep and the green power LED next to the button will light. If the green LED flashes, remove and replace the 9 volt battery. The Receiver will also indicate a signal if within tracing range.
- 3) Slide the button forward to the SEARCH position and move the Receiver to within a few inches of the Transmitter. The red LEDs will flash and the unit will emit a “beeping” sound.

4) Move the Receiver to the vicinity of the circuit breaker panel, then press and slide the button to the SEARCH position. If a signal is received, move the Receiver toward the panel producing an increase in signal strength which is indicated by both the signal strength and variable signal circle of LEDs. (The Receiver will pick up a signal within 12 to 18 inches of a panel even with the panel cover closed). Check all panels without releasing the button to find the strongest signal. This is the panel containing the breaker feeding the Transmitter.

5) Open the panel door, push and hold the BREAKER button, and sweep the Receiver over all the breakers in the panel as shown. Next, sweep the Receiver slowly down the rows of breakers until the LEDs flash. The breaker or fuse providing the highest signal strength and most variable signal LEDs is the one powering the Transmitter, and hence, the receptacle or device to which it is connected.

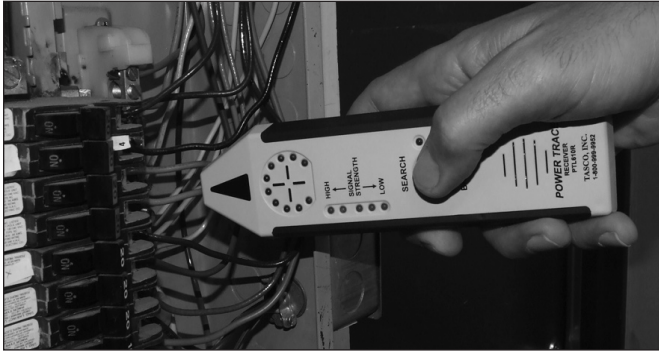


NOTE: The Receiver **MUST** be held in the position shown to be aligned with the magnetic field.

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If there is any doubt as to which is the correct breaker or fuse (due to unusual breaker design, wiring, or the possibility that two breakers are feeding the same circuit) remove the panel trim and check the wires.

You can also continue to follow the power line by locating the remote main breaker in the same fashion. Since the signal is on a single phase circuit you can even find which leg of the breaker is feeding the Transmitter.



If there is any doubt as to which breaker is active, remove the breaker panel trim and test the wires as shown.

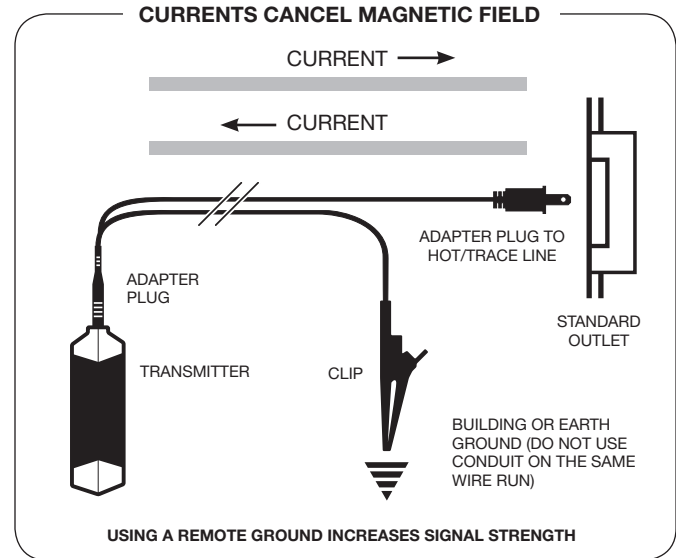
Important: Panel trim can distort the signal when locating breakers on the outside corners of the panel. This can cause stronger signal level on the adjacent breaker instead of the correct breaker in the corner. Before labeling any breaker next to the corner breaker, confirm it is the correct breaker by removing panel trim and repeating the sweep of all breakers in the panel.

Note: The Receiver **MUST** be held in the position shown to be aligned with the magnetic field.

TRACING LIVE WIRES

Any wire carrying the current load from the Transmitter will have the magnetic signature around it. This means that both the hot and neutral wires will have the signal.

If hot and neutral are close together as in a cable or conduit they tend to cancel each other out.

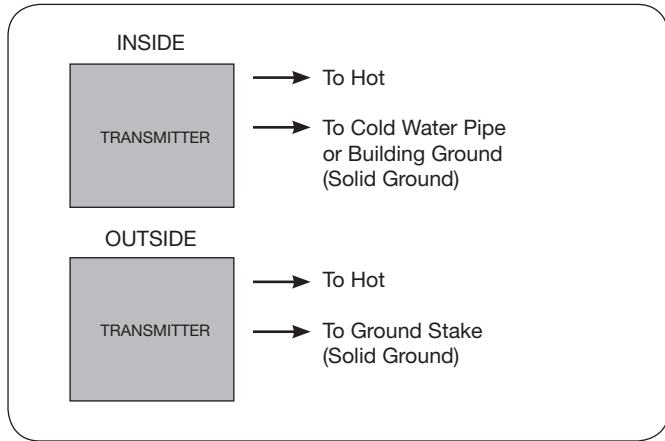


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Although the Power Trace™ is powerful enough to trace these signals at short distances from cable or conduit, maximum range is obtained by separating the current paths.

Separating the current path simply means drawing current through the conductor in one direction by using a remote path.

By using these or similar methods, wiring can be followed up to 20 feet away.



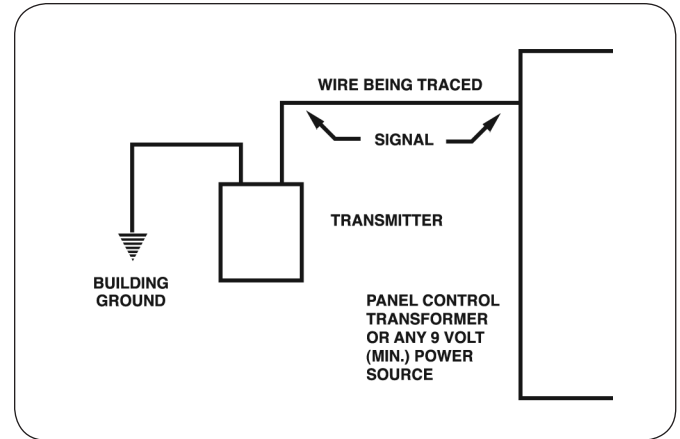
In SEARCH mode, the Receiver will indicate you are within tracing distance by initially flashing all variable signal LEDs. If the signal is lost, resetting the SEARCH button will adjust the receiver to the appropriate signal level. The signal strength will increase and the variable signal LEDs will adjust as you get closer to the signal wire. This creates the most accurate reading possible based on the Receiver's distance from the signal wire.

NOTE: If the transmitter LED does not flash when using a remote ground you may have a poor ground connection.

TRACING LOW VOLTAGE CIRCUITS

To trace low voltage circuits (50 volts or less), connect one Transmitter test lead to a known ground, and the other Test lead to the low voltage conductor.

Operate the Receiver per prior instructions.

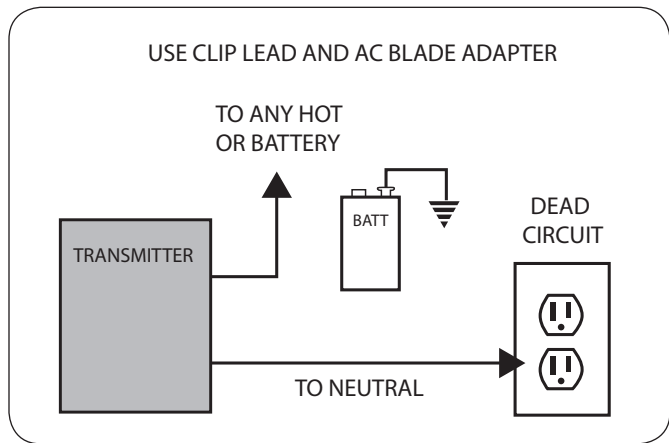


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LOCATING DEAD CIRCUITS

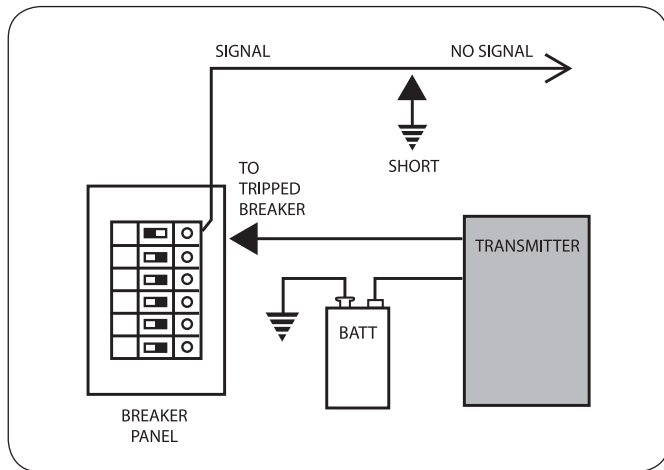
A dead circuit caused by a tripped breaker can be located by following the circuit's neutral line. Connect power from any energized line and return it through the neutral of the dead circuit. You can then trace the neutral wire to the panel.

NOTE: You may also find the source or hot wire breaker with this process, however, the same panel will likely contain both circuits. To verify this, remove the panel trim and test the neutral wire.



FINDING SHORTS TO GROUND

Typical configuration is shown below. Confirm that the transmitter LED is flashing then follow the wire until the signal disappears, indicating the location of the short.



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SPECIFICATIONS MODEL PTL610

TRANSMITTER:

Operating Voltage: 9-600 Volts, AC/DC
Power: Line power or 9 volt battery
Current: 8 mA Avg.
Frequency: 15KHz
Operating Temp: 0°F to 120°F (-18° - 50°C)
Size: 3.75" x 2.5" x 1"

RECEIVER:

Power: 9 Volt Alkaline Battery (included)
Range: up to 20 ft. from circuit
Operating Temperature: 0°F to 120°F
(-18° - 50°C)
Size: 7.5" x 2" x 1"

WARRANTY:

Tasco, Inc. warrants that The Power Trace™ will be free from defects in workmanship and materials for a period of two (2) years from the date of purchase.
Tasco, Inc. will, without charge, replace or repair, at its option any warranted product returned to the Tasco factory service department.
Tasco, Inc. shall not be liable for any consequential damages, including without limitation, damages resulting from loss of use or damages resulting from use or misuse of this product. Some states do not allow limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
This warranty gives you specific rights and you may also have rights which vary from state to state.

EXCLUSIONS:

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized repairs or alterations.

NOTICE TO PURCHASER:

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied: Manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Manufacturer shall not be liable for any injury, loss or damage direct or consequential, arising from the use or misuse of this product. User shall determine the suitability of the product for his intended use, and user assumes all risk and liability in connection therewith. No statements or recommendations not contained herein shall have any force or effect unless in an agreement signed by officers or the manufacturer.

MADE IN THE USA BY:

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