

# SURETRACE™ CIRCUIT TRACERS



## Your IDEAL troubleshooting solution

Designed to find everything,  
while saving you time and money

- Fast and accurate breaker and conductor location
- Finds shorts, opens and splice errors
- Energized/De-Energized systems including 3-Phase
- Measures and indicates voltage level (61-948/950)
- Measures amperage (61-950EU/ISC-950)
- Tests for Continuity (61-948EU/950EU)
- Induces tracing signal on conductors (61-950EU/ISC-950)

**IDEAL**  
electrical™

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AL-40



## BREAKER OR FUSE

# FIND IT

# 1

### STEP 1: VERIFY POWER AND SIGNAL ON CIRCUIT

Plug Transmitter into a socket and power on.



Hold the Receiver near the Transmitter to verify connection, confirmed by the lightning bolt symbol.



# 2

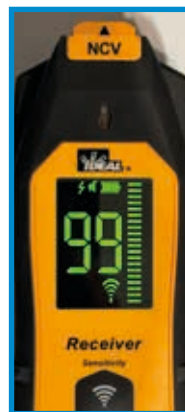
### STEP 2: SCAN EACH PANEL FOR THE HIGHEST READING

Set Receiver to the highest sensitivity mode.



Place Receiver flat on the front near the top of each panel until the highest reading is reached.

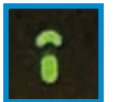
This is the correct panel.



# 3

### STEP 3: SCAN EACH BREAKER FOR HIGHEST READING

Set Receiver to the lowest sensitivity mode



Scan each breaker and look for the highest reading. This is the correct breaker.

Turn breaker off and verify CertainCircuit™ Lightning bolt indication has gone out.



#### TIPS FOR HIGHEST ACCURACY:

- Perform two slow scans around breakers to start.
- Hold Receiver at a right angle to the breaker and level with the floor.
- Once highest reading is found, tilt Receiver up and down at a 45° angle to confirm consistent high numeric reading.



## COMMON SPLICE ERROR

# FIND IT

# 1

### STEP 1: ATTACH CLIPS

1. Confirm circuits are de-energised
2. Use a continuity check to determine which conductors are affected
3. Attach Transmitter crocodile clips to the affected circuits' neutral cables. (The two neutrals of the AFCI/GFCI/RCD/Combo circuit breakers that are nuisance tripping)

Note: The 61-948EU and 61-950EU will indicate continuity automatically, the 61-946EU requires a separate tester.



# 2

### STEP 2: SCAN

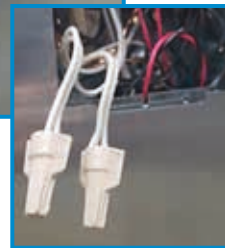
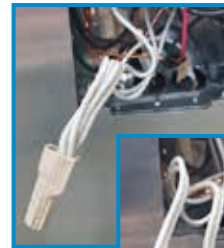
Scan each electrical location (switch, socket, light fixture, etc.) with the Receiver in the 3rd sensitivity mode setting until you identify the highest numeric reading on the Receiver. The highest numerical value on the Receiver indicates the likely location of the incorrectly spliced conductors.



# 3

### STEP 3: SEPARATE NEUTRALS

Identify the incorrect wire connection, separate each circuit's neutral conductors, and re-splice each neutral circuit's connections.



For informational videos please go to [IDEALCircuit-Tracer.com](http://IDEALCircuit-Tracer.com)



# 1

## STEP 1: DETERMINE THE SHORT CIRCUIT

1. Confirm circuit is not live.
2. Unplug all items connected to the affected circuit.
3. Verify the fault is in the affected circuit.
4. Use a continuity check to determine which conductors are affected.

Note: The 61-948EU and 61-950E will indicate continuity automatically, the 61-946EU requires a separate tester.



# 2

## STEP 2: ATTACH CLIPS AND SET RECEIVER'S SENSITIVITY

Set Receiver to the first, or highest, sensitivity mode.



Note: Sensitivity levels may need to be adjusted in various situations

### FOR A NEUTRAL TO GROUND CONDITION WITH AFCI/GFCI/ COMBO BREAKERS



Attach alligator clips to the breaker's neutral wire and ground wire.

### FOR STANDARD BREAKERS

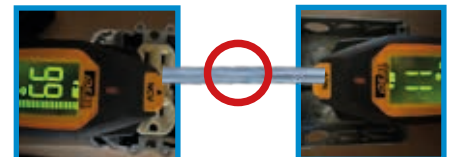
Attach alligator clips to the neutral and circuit's live wire.



# 3

## STEP 3: SCAN

### METAL CONDUIT



### SHORT CIRCUIT FOUND IN CONNECTING CONDUIT

Since metal conduit obstructs tracing, simply trace over the sockets in the circuit(s).

Look out for where the reading starts to drop. This indicates that the short is located between the socket with the decreased reading and the previously traced outlet.

### PVC CONDUIT/ UNDERGROUND

Hold the Receiver flat on the conduit/ground and trace along until the reading drops to zero. This is the location of the short.



## WIRE IN WALL, CEILING AND FLOOR

# FIND IT

# 1

### STEP 1: PLUG ADAPTER INTO CIRCUIT

Plug the transmitter into a wall socket using the socket plug adapter provided with the circuit tracer.



Hold the receiver near the transmitter to verify signal strength.

The lightning bolt indicates power is present on the circuit.



# 2

### STEP 2: SET RECEIVER TO HIGHEST SENSITIVITY MODE AND SCAN

Set the receiver to the highest sensitivity mode.



Start several feet away from the transmitter, then scan the area while holding the back of the receiver flat.



Rotate the receiver to find the highest numerical reading.

This is necessary to follow signal strength variations while tracing due to bends, twists and conductors that run deeper or shallower along their path.

Signal strength variations occur and may require constant adjustment to the angle of the receiver to trace.

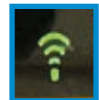
# 3

### STEP 3: MAINTAIN ORIENTATION AND TRACE

Adjust the signal strength on the receiver if needed.

If the reading is too high, reduce the strength.

If the reading is too weak, utilise the remote return path method for the transmitter, then repeat step 2.



To assist in tracing, use a small piece of tape to pinpoint the location of the cable.



Continue tracing while following the highest reading until the end of the cable is found.



## BURIED CONDUCTOR

# FIND IT

# 1

### STEP 1: ATTACH ALLIGATOR CLIPS

Use appropriate methods and safe isolation to ensure the conductors are de-energised and locked out before proceeding.

Verify that you de-energised the correct conductors before proceeding when possible. Re-energise after the transmitter is attached.

Using appropriate safety methods, attach the alligator clips with leads to the Live and Neutral conductors on the supply side of the branch circuit.



# 2

### STEP 2: PLUG LEADS INTO TRANSMITTER AND TURN IT ON



# 3

### STEP 3: TURN ON RECEIVER AND TRACE

The orientation of the receiver to the wiring affects the displayed signal strength.

Simply adjust the orientation of the Receiver relative to the buried conductor to maximise the displayed signal strength.

Begin tracing the wires buried in the ground by following the strongest signal, and adjusting the sensitivity to obtain readings in the 60's to 80's.



Note: The strongest tracing signal will always be accomplished by connecting to a closed loop energised circuit with an active load.

Note: The circuit in these pictures has been de-energised and locked out in accordance with NFPA 70E.



# 3-PHASE BREAKER, FUSE, CONDUCTOR

# FIND IT

# 1

**STEP 1:  
ATTACHING  
ALLIGATOR  
CLIPS TO LIVE  
3-PHASE SYSTEMS**

Using appropriate safety methods, attach the alligator clips with leads to any two of the three phases (ensure leads are not plugged into the transmitter).

Next, plug opposite ends of leads into the transmitter starting with the black lead first.

Next, Turn on Transmitter



# 2

**STEP 2:  
PLUG LEADS INTO  
TRANSMITTER AND  
TURN IT ON**



# 3

**STEP 3:  
TURN ON  
RECEIVER  
AND TRACE**

Trace conductors or identify breakers or fuses by using previously described methods.



Adjust sensitivity as required to optimise received signal strength. Proper orientation of the receiver is important and may require adjustment to maximise displayed signal strength.



Note: The circuit in these pictures has been de-energised and locked out in accordance with NFPA 70E.

# DIFFICULT TO CONNECT CONDUCTOR

# FIND IT

# 1

## STEP 1: CLAMP OVER CONDUCTOR

Identify the conductor for which you would like to trace or find the breaker  
Turn on the ISC-950 clamp and place it around the conductor to induce the signal into the conductor



# 2

## STEP 2: SET RECEIVER TO HIGHEST SENSITIVITY LEVEL AND SCAN

Turn on receiver and set the sensitivity to the highest level (Level 4-indicated by four arcs over the dot)

*Note: the receiver defaults to level 4 when turned on.*



Trace/locate the conductor's path starting several feet away from the clamp.

Receiver will show highest numerical value when centered over a clamped conductor.

When scanning breakers determine the one indicating the highest signal strength reading.



# 3

## STEP 3: TRACE CONDUCTOR PATH AND/OR IDENTIFY BREAKER

Orientation of receiver will affect signal strength, always look for highest value.

If the receiver is saturated (constant signal strength of 99), reduce the sensitivity range until you can use to identify the breaker/signal conductor.

Note: when locating a breaker with the clamp around an energised or de-energised circuit, a higher sensitivity level setting of 2 or 3 on the receiver may be required to identify the correct breaker.



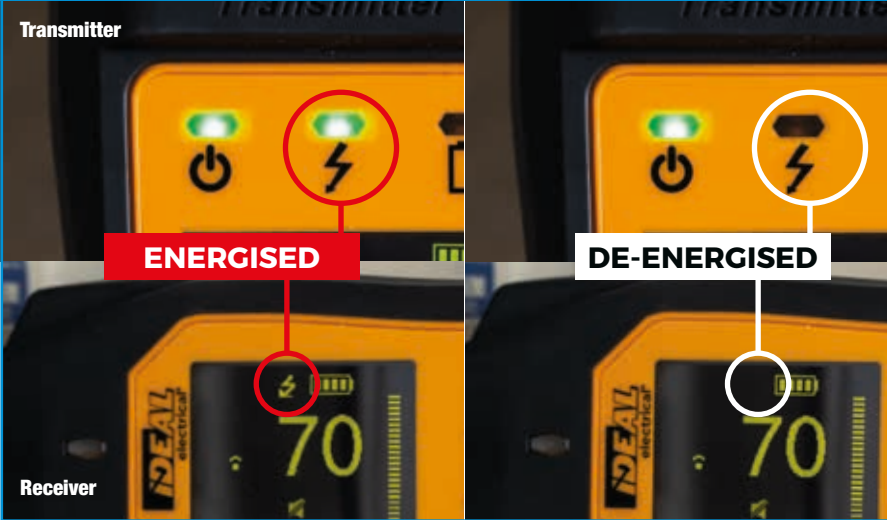
# SURETRACE™ CIRCUIT TRACERS MODEL COMPARISON



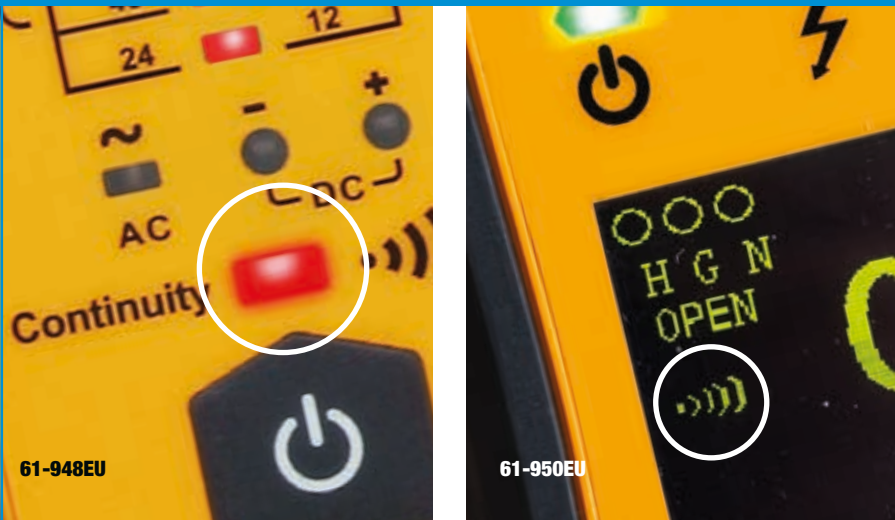
	SURETRACE™	SURETRACE™ PLUS	SURETRACE™ PRO
<b>Part Number</b>	<b>61-946EU</b>	<b>61-948EU</b>	<b>61-950EU</b>
<b>CAT Safety Rating</b>	CAT III 480V	CAT III 600V	CAT III 600V
<b>For Energised/De-Energised Circuits</b>	YES	YES	YES
<b>3-Phase System Compatible</b>	YES	YES	YES
<b>Sensitivity Levels</b>	4	4	4
<b>CertainCircuit™ Technology</b>	YES	YES	YES
<b>Continuity Test</b>	-	Visual & Audible	Visual & Audible
<b>Voltage Display</b>	-	8 Levels	Exact Measurement
<b>AC/DC Polarity Indicator</b>	-	YES	YES
<b>Amperage Reading</b>	-	-	YES
<b>PPE Indicator</b>	-	YES	YES
<b>Built-In NCVT</b>	-	YES	YES
<b>Outlet Wiring Verification</b>	-	-	YES
<b>Outlet Voltage</b>	-	-	YES
<b>Mute Function</b>	YES	YES	YES
<b>Volume Adjustment</b>	-	-	YES
<b>Built-In Work Light</b>	-	YES	YES
<b>Low Battery Indicator</b>	YES	YES	YES
<b>Receiver Display(s)</b>	Single Backlit	Dual High-Visibility	Dual High-Visibility
<b>Receiver Display Rotation</b>	-	YES - 180° Increments	YES - 90° Increments
<b>TightSight® Display (receiver)</b>	-	YES	YES - 90° Rotating
<b>Inductive Sensing Clamp</b>	COMPATIBLE	COMPATIBLE	INCLUDED
<b>Drop Protection</b>	2 m	2 m	2 m
<b>Built-In Kickstand (transmitter)</b>	YES	YES	YES
<b>Hanging Strap Clip*</b>	YES	YES	YES
<b>BILT® App Instructions/Tutorials</b>	YES	YES	YES
<b>Protective Case</b>	Soft Case	Rugged Hard Case	Rugged Hard Case
<b>Included Accessories</b>	EU/UK Outlet Plug Lead and Adapter 2x Alligator Clips 2x 90 cm Lead 10x AA Batteries	EU/UK Outlet Plug Lead and Adapter 2x Alligator Clips 2x 90 cm Lead 10x AA Batteries	EU/UK Outlet Plug Lead and Adapter 2x Alligator Clips 2x 90 cm Lead One 7.7 m (25 ft) remove/return path lead USB-A to USB-C Charging Cable 10x AA Batteries

\*Universal Magnetic Hanging Strap (UMHS-757) sold separately

# LEAVE YOUR SECOND TESTER BEHIND AND TROUBLESHOOT WITH EASE!

CertainCircuit™ Technology		Models:	61-946EU	61-948EU	61-950EU
	<p>CertainCircuit™ technology enables accurate breaker/fuse confirmation and live circuit identification, without the need for a second person at the panel.</p> <p>A live circuit is indicated when the lightning bolt icon is illuminated. After the correct breaker has been identified and tripped, the transmitter senses the loss of power and sends a different signal back to the receiver at the panel to confirm the right circuit has been de-energised, turning off the lightning bolt.</p>				

Outlet Wiring Verification	Model:	61-950EU
	<p>Verify outlet wiring configuration using the included 3-wire lead adapter (TL-950) and integrated wiring verification test** that displays six different wiring configurations.</p> <p>**Patent-pending feature</p>	

Continuity	Models:	61-948EU	61-950EU
	<p>The SureTrace Plus and Pro models feature a patent-pending continuity test, eliminating the need for a second tester when searching for wiring faults.</p> <p>Continuity is indicated both visually and audibly on the 61-948EU (Plus) and 61-950EU (Pro) transmitters.</p>		

## Non-Contact Voltage Testing

Models: 61-948EU 61-950EU

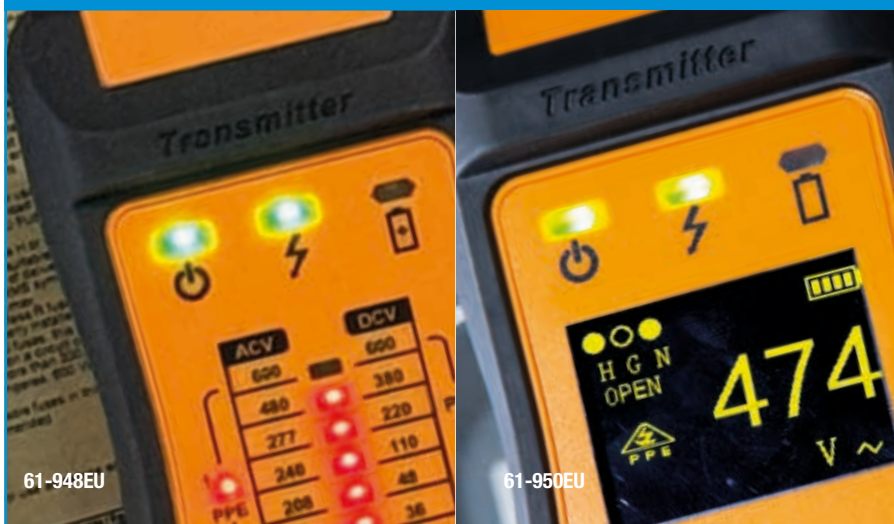


61-950EU

The built-in NCV in the tip of the receiver safely detects the presence of 24-600V AC voltage. This is indicated with a red light and audible tone, as well as displaying analogue bars on the receiver's main and TightSight bottom displays.

## Voltage

Models: 61-948EU 61-950EU



61-948EU

61-950EU

Take safety and troubleshooting to the next level with the integrated voltage test:

- The SureTrace Plus model indicates eight different voltage levels between 24V to 600V AC, 12V to 600V DC, and DC polarity
- The SureTrace Pro model displays the precise voltage level, 0-600V AC/DC, on its screen

## Amperage

Model: ISC-950



ISC-950

The Inductive Sensing Clamp (ISC-950) measures and displays amperage up to 600A AC while inducing a traceable signal.

This clamp is included with the SureTrace Pro model (61-950EU) and is compatible with all other SureTrace models (sold separately).

# SURETRACE™

## CIRCUIT TRACERS

INCLUDED ACCESSORIES:	SureTrace	SureTrace Plus	SureTrace Pro
EU/UK-Outlet Plug Adapter	•	•	•
2x Alligator Clips	•	•	•
2x 90cm Leads	•	•	•
Inductive Sensing Clamp			•
7.7 m remove/return path lead			•
USB-A to USB-C Charging Cable			•
10x AA Batteries	•	•	•
Soft Case	•		
Rugged Hard Case		•	•



Intertek  
5028647



**SureTrace Pro**



**SureTrace Plus**



**SureTrace**

### DESCRIPTION

### PART #

SureTrace™ Circuit Tracer	<b>61-946EU</b>
SureTrace™ Plus Circuit Tracer	<b>61-948EU</b>
SureTrace™ Pro Circuit Tracer	<b>61-950EU</b>
SureTrace™ Inductive Sensing Clamp	<b>ISC-950</b>

**IDEAL Electrical and BILT® make it easier than ever to master using your SureTrace™ Circuit Tracer.**

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- Real examples showing steps
- FREE to download and use



# BILT®

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