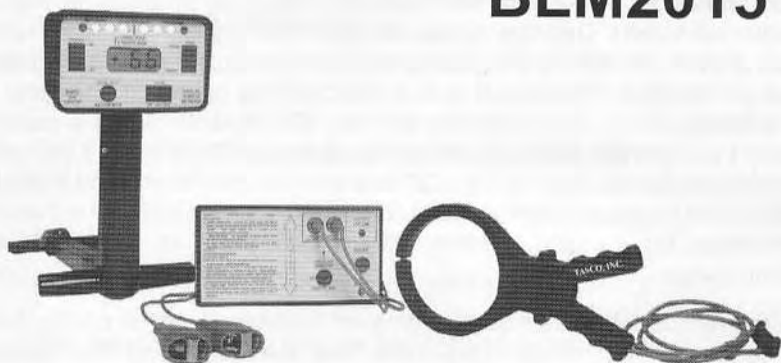


BURIED LINE LOCATOR

Instruction Manual

BLM2015



TASCO, INC.

THANKS FOR CHOOSING THE BURIED LINE LOCATOR

This unique locator uses new technology that allows it to perform functions typically found in much more expensive units. The design allows it to be far lighter, yet still have better accuracy and definition. The Transmitter uses a low current output and a frequency that is finely tuned. This combination is less likely to disturb lines with equipment connected and allows both Transmitter and Receiver to operate using standard "AA" size batteries. Microprocessors have been used in this product to increase *simplicity* of use. The product is easy to understand with a shorter learning curve than traditional locators.

HOW THE BURIED LINE LOCATOR OPERATES

Your Buried Line Locator is composed of two primary components: the Receiver and the Transmitter.

The Receiver display indicates signal level, depth, low battery, passive mode and boost mode. The auto gain may be reset at any time with the signal reset button. This can change the gain from a gain of less than one to a gain of over one million. The microprocessor checks for the proper gain 25 times per second. If the signal or line direction has been lost, the reset will immediately allow you to relocate the line. The audible signal is used for quickly tracing lines. It will also sound once every 60 seconds, if the unit is inadvertently left on. The LED & LCD displays are used to pinpoint exact line location and for depth measurement. The Receiver may be used without the Transmitter for locating passive frequencies such as Cable TV and electrical lines.

The Transmitter should be used whenever possible. It can be connected to any conductor carrying up to 600 volts. The Transmitter induces a unique signal onto the line or conduit being traced. The signal is a crystal controlled frequency that the Receiver is specifically tuned to locate. This greatly reduces the possibility of interference from electrical noise, which is often caused by machinery and industrial equipment connected to the same circuit. This signal will not affect computers or voltage sensitive equipment. The Transmitter features three different connection methods making it easy to use with almost any conductor. It can be connected using clip leads, clamp or inductive coupling. The Transmitter indicates low battery, power and live line.

GENERAL SPECIFICATIONS BLM2015

Transmitter:

Power: 6 volts DC (4 "AA" Alkaline Batteries)
Operating Voltage: 0-600 VAC, 0-300 VDC
Current: 13MA (Open Line) / 150MA (Live or Shorted Line)
Frequency: 33.3 kHz
Operating Temperature: 0°F to 120°F (-17°C to +50°C)
Size: 7.5" x 4" x 2.1"
Weight: 1 lb. 7 oz. With batteries and clamp

Receiver:

Power: 6 volts DC (4 "AA" Alkaline Batteries)
Depth Range: Down to 15 ft./1 ft increments (5 meters/.1 meter increments)
Passive Mode Frequency: 12-24 kHz
Trace Mode Frequency: 33.3 kHz
Operating Temperature: 0°F to 120°F (-17°C to +50°C)
Size: 4.1" x 8.5" x 38" (Shaft fully extended)
Weight: 1 lb. 12 oz. With batteries

TYPICAL FIELD APPLICATIONS

TRACE

Conduit
Coax Cables
Shorted, Open or
live electrical lines
Telephone lines
Fiber Optics
(with metal shield)
Gas pipes
Water pipes
Security lines

FIND

Shorts in electrical
lines
Breaks in electrical
lines
Hidden conductors
Junction boxes
Fuses
Unknown power &
Cable TV lines

DETERMINE

Conductor depth
Conductor
direction
Location of under-
ground breaks
Location of
electrical shorts

HOW TO USE THE BURIED LINE LOCATOR TRANSMITTER

The Transmitter provides the specific frequency that the Receiver is tuned for in the "TRACE" mode setting. The Transmitter can supply signal to the conductor being traced in three different ways. These include direct line connection, clamp connection or inductive coupling.

Direct Line Connection: This is the preferred connection method. It will provide the strongest signal and best accuracy.

- 1) Plug supplied clip leads into signal output jacks.
- 2) Connect one clip lead to a solid earth ground that is perpendicular to the line direction of the conductor being traced. If a ground connection is not available, use the ground stake provided.
- 3) Connect the second clip to conductor to be traced. This can be any conductor such as conduit, electrical wires, cable TV, phone lines, etc.

WARNING: This unit is rated for live line connections up to 600 volts AC. Never connect to a live line unless you are a **Qualified Electrician**. Electric shock can result in injury or death. Test electrical lines with a voltage tester or multimeter before connecting and always connect ground first.

- 4) Set switch to line connection/clamp. Power light will flash, indicating the unit is on and signal is being set.

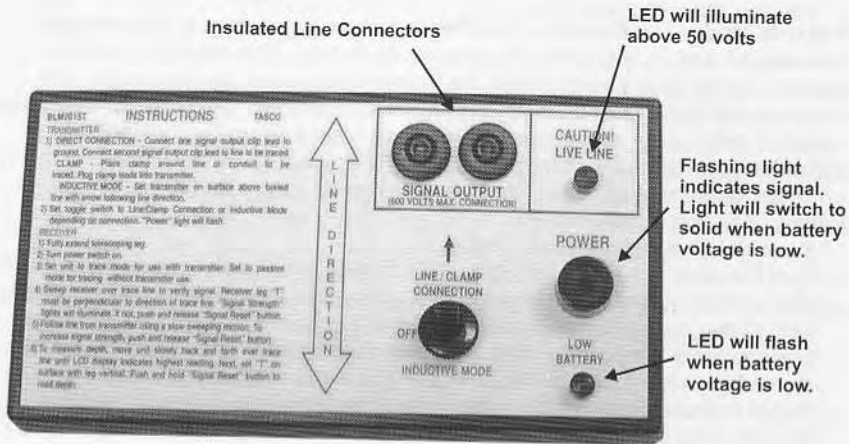
NOTE: When tracing live lines, Transmitter must be connected at the branch rather than at the source. This will provide accurate depth readings.

Clamp Connection: When a direct line connection is not possible, the clamp is a good second choice. This connection will create a slightly weaker signal than a direct line connection. The clamp draws high battery current and the output signal directly corresponds to the battery condition. It is not necessary to use a separate ground when using the clamp, however the conductor must be grounded at each end.

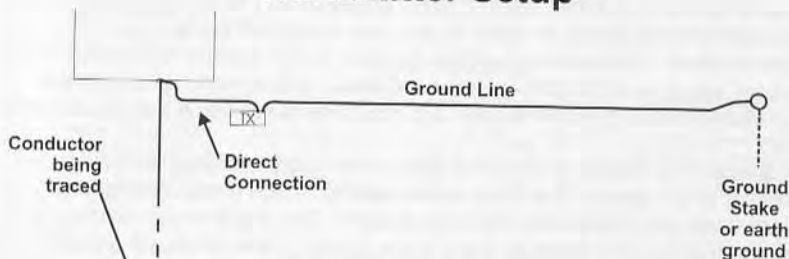
- 1) Place the provided clamp around the conductor to be traced.
- 2) Plug clamp into the Transmitter jacks.
- 3) Set switch to Line/Clamp Connection. Power light will flash, indicating unit is on and signal is being sent.

Inductive Coupling: This is the least effective connection method. The signal is sent through the earth to be picked up by the conductor (conductor works like an antenna) and is not as strong.

- 1) Place Transmitter directly over line to be traced. The arrow on the Transmitter must point in the same direction as the conductor. If line direction is unknown, it can usually be verified by using the Passive Mode setting on the receiver.
- 2) Set switch to Inductive Mode. Power light will flash, indicating unit is on and signal is being sent.



~Transmitter Setup~



Use direct connection whenever possible.

Make sure ground line is perpendicular to the conductor being traced and does not cross over the conductor or other known lines. Use as long a ground line as possible.

If soil is dry, pour water into ground at the ground stake/ground connection point.

In urban settings where ground stake use is not possible due to asphalt/concrete, connect ground line to street signs, chain link fencing or other well grounded objects.

RECEIVER

Passive Mode: The Receiver identifies lines carrying current in frequencies between 12 and 24 kHz in the Passive mode setting. This setting is used for general scanning or tracing, when the Transmitter cannot be connected. It is likely you will find signal on more than just electrical lines as conductors such as rebar or metal scrap may pick up signal from nearby lines. Try to verify that current is flowing to any nearby structures. This can be accomplished by turning on lights, heaters, equipment, etc. It is also helpful to turn on televisions when tracing coax line underground.

- 1) Set mode switch to Passive setting.
- 2) Turn Receiver on. LEDs will light; LCD display and Passive mode symbol will also appear. Signal boost indicator will appear unless you are already near a very strong signal. If bars appear on the LCD display, check to see that the Transmitter is turned off. Passive mode only functions when the Transmitter is *not* being used. If bars still appear, the unit is out of signal range.
- 3) Signal indication starts at full level but will automatically adjust as signal strength increases. Auto gain is set by simply scanning the search area. You will receive stronger signals directly over lines carrying passive frequencies. If you are unsure of line direction, simply trace a circle pattern over the area. The Receiver will indicate the strongest signal strength when you are facing the same direction as the line.
- 4) If signal is lost or reduced when tracing simply push the signal-reset button. This will increase signal strength so you can continue tracing.
- 5) Receiver does not measure depth in Passive mode. If depth measurement is necessary, you should be able to trace the line to a connection point for the Transmitter. Connect the Transmitter and measure depth using the Trace mode setting.

Trace Mode: The Receiver identifies the specific signal created by the Transmitter when used in the Trace mode setting. Trace mode setting only functions when the Transmitter signal is present. The Trace mode locating is superior to the Passive mode in many ways. Using Trace mode will provide stronger signal, better accuracy and more consistent overall results. The Receiver operation is very similar whether tracing in the Passive or Trace mode setting.

- 1) Connect and turn on Transmitter per previous instructions.
- 2) Set mode switch to Trace setting.
- 3) Turn Receiver on. LEDs will light and LCD display will indicate signal strength. Signal boost indicator may also appear depending on signal strength. If bars appear on the LCD display, check to be sure the Transmitter is turned on and the connections are tight. If the display still shows bars, you may be out of signal range.
- 4) Signal indication starts at full level but will automatically adjust as strength increases. Auto gain is set by simply scanning the search area. You will receive the strongest signal directly over the line carrying the Transmitter frequency.

If you are unsure of line direction, simply trace in a circle pattern over the area. The Receiver will indicate the strongest signal strength when you are facing the same direction as the line.

- 5) If the signal is lost or reduced when tracing simply push the signal-reset button. This will increase signal strength so you can continue tracing.
- 6) Depth can be measured at any point along the conductor. Slowly move the Receiver from left to right, until LCD indicates the highest reading. Set lower sensor directly on the ground with the shaft completely vertical. Push and hold Reset button. Depth will be indicated in feet and tenths of feet (meters and tenths of meters). To verify depth move the Receiver slowly left to right with the Reset button held down. The *lowest* reading will be correct and occur when unit is directly over the conductor.

NOTE: When tracing live lines, the Transmitter must be connected at the branch rather than the source. This will provide accurate depth readings.

~LCD DISPLAY FEATURES~

Signal Strength Reading

Symbol flashes in passive mode setting.

Boost mode increases gain by 60 times.

"BAT" flashes when battery voltage is low.



Signal strength reading in Passive or Trace mode setting.

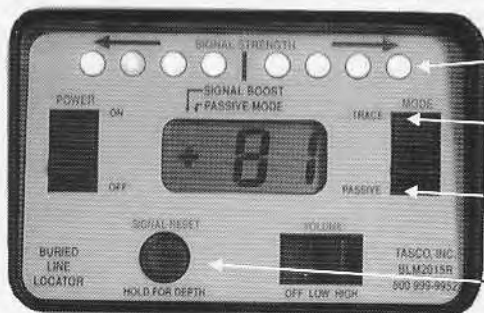
Depth Reading

Measures depth to 15 feet in Trace mode. (5 meters in non-U.S. models)



Reads in .1 foot increments. (.1 meter increments in non-U.S. Models)

~PANEL FEATURES~



LEDs indicate signal strength. More LEDs = stronger signal.

Trace mode for Transmitter use.

Passive mode locates without Transmitter use.

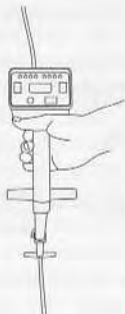
Resets display for maximum reading. Hold button to read depth in Trace mode.

RECEIVER

Fully extend shaft for accurate depth readings.

Always locate strongest signal before measuring depth.

Receiver may be moved with button held. Lowest reading is directly over conductor.



Always hold Receiver so pick up "T" is perpendicular to line conductor.



Shaft must be fully vertical for Accurate depth readings.

FREQUENTLY ASKED QUESTIONS

- Q** Is there any way to measure depth in Passive mode?
- A** No, however, once the conductor is traced in Passive mode you can connect the Transmitter to it then measure depth in the Trace mode setting.
- Q** The Receiver buzzer does not always sound when I'm near the conductor being traced. Do I need to reset the unit to continue tracing?
- A** No, the buzzer is designed to save you time when tracing. It will only sound when signal level is above 75 on the LCD display. The signal strength range will vary depending on the depth of the line.
- Q** When locating shallow lines it is difficult to keep a high signal level reading on the Receiver. How often should I reset signal?
- A** Signal will need to be reset more often on shallow lines as any change in line direction or depth will have a greater impact due to a tighter auto-gain window. Receiver may be used without the shaft extended allowing you to keep the sensing "T" several inches above the surface. This will de-tune sensitivity and allow for quicker locating. Don't forget to extend shaft before taking depth measurements!
- Q** In some situations I get bars on the LCD display, but not other indications. What does it mean?
- A1** In some cases you may be out of signal range. If the signal strength will not reset with the pushbutton, scan the entire area. Reset the Receiver often until you are close enough to trace line to read a signal level.
- A2** The Receiver will only indicate in Passive or Trace mode. When the Transmitter signal is detected the Receiver will only operate in the Trace mode setting. If the Transmitter signal is not detected, the Receiver will only operate in the Passive mode setting.
- Q** What does it mean, specifically, when you say Transmitter must be connected to the branch, rather than at the source when tracing live lines?
- A** Signal strength can fade on live electrical lines, particularly if there is low current flow. By connecting at the end of the line it creates a current path back from the source of the line power. This creates a strong signal which is less affected by external sources such as other conductors and the earth. This connection will assure accurate depth readings on live lines.

Technical Help Line
1800-999-9952

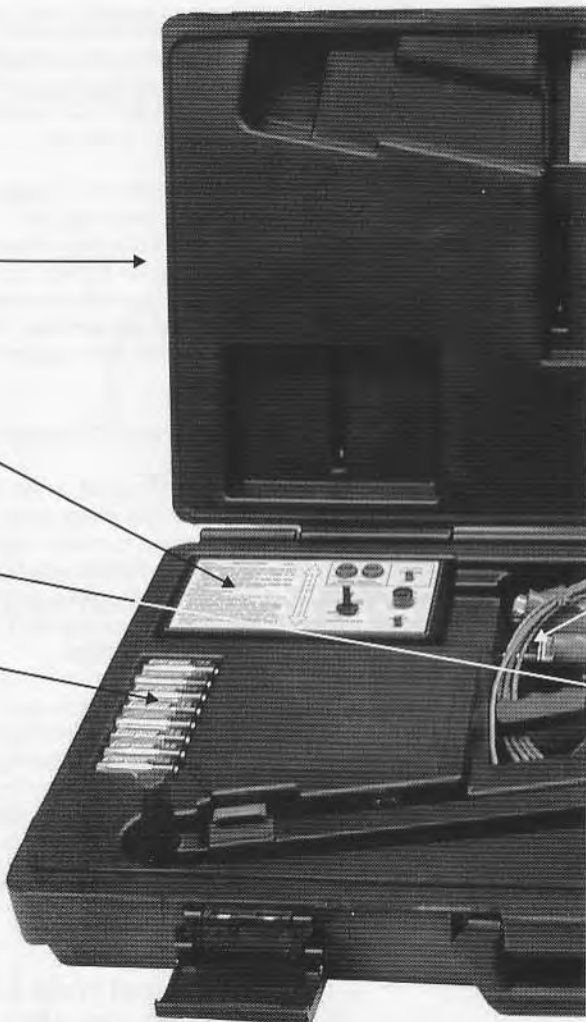
CONTENTS

DURABLE LIGHT-
WEIGHT MOLDED
CARRYING CASE

TRANSMITTER

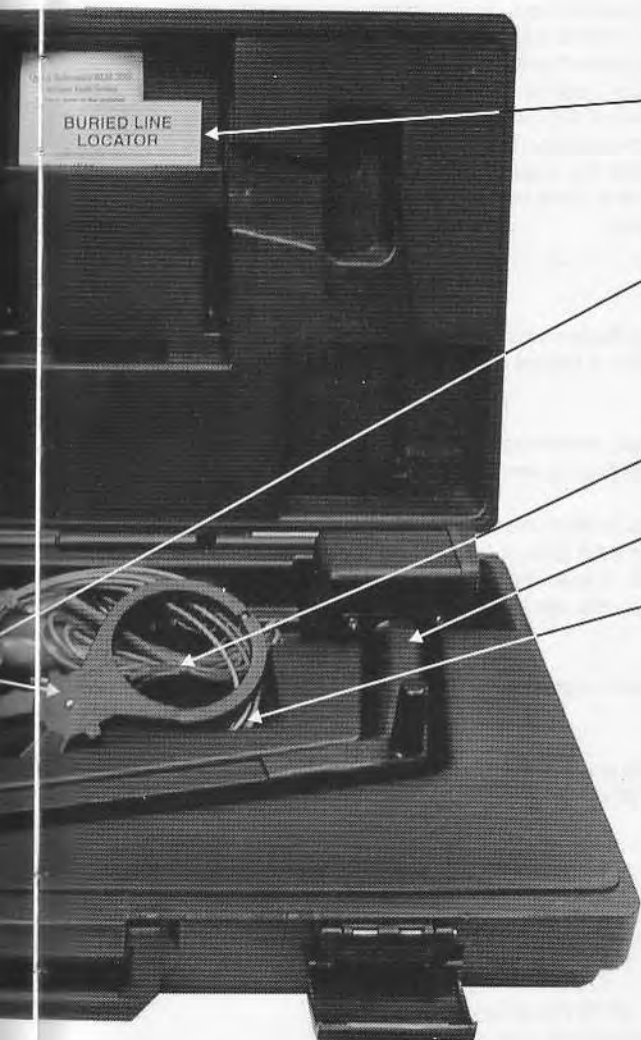
CLAMP
ACCESSORY

SPARE BATTERY
HOLDING AREA**



** Batteries installed
prior to shipping.
Spare batteries not
included with kit.

S BLM2015



BURIED LINE
LOCATOR

INSTRUCTION
MANUAL, WARRANTY
& HELPFUL HINTS

STAINLESS
STEEL
GROUND
STAKE

DIRECT
CONNECTION
TEST LEADS

RECEIVER

15' TEST LEAD FOR
RECOMMENDED
GROUND
CONNECTIONS

Notice to Purchase:

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, expressed 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 of the manufacturer.

Tasco, Inc. Warrants that the Buried Line Locator 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 ay consequential damages, including without limitation, damages resulting from loss of use, or damages resulting from the use or misuse of this product. Some state 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.



PIC Australia P/L

• 10 Camelot Court (PO Box 9) Mt Eliza, Victoria 3890 Australia
• Phone - (03) 9787 8026 • Fax - (03) 9787 8957

1300 362 892
www.picaust.com

Phone & Power Connection Leads

Handy Hint
- see over -

Why use 'Direct Connection'

Connecting directly onto a Cable significantly increases the signal strength.

When using Phone Connection

Connect Alligator Clip to a suitable earth.

(eg. Metal Body of Appliance, Tap, Stink, Metal Door Frame ...)

When using Power Connection

**** SAFETY WARNING ****

- 1) Connection should only be performed by trained professionals who are familiar with electrical hazards.
- 2) Always Plug Leads into Transmitter before connecting to Mains Power.
- 3) Always Unplug Main Power before disconnecting Plug Leads from Transmitter

DISPOSE OF LEAD IF DAMAGED OR FRAYED

PLEASE NOTE

FOR BOTH PHONE & POWER

If circuit is working/live and the connection is correct

- Transmitter 'Live Line' will light up -

2 Pair Telecom Lead-in Cable

- or other small cables -

Background

The smaller the cable, the less signal is induced into it from the Transmitter Clamp. Hence it is often difficult to trace small cables.

Hint

There is usually slack in these instances. So, wind the cable around the clamp as illustrated.

- Remember However -

Direct Connection Guarantees The Strongest Signal

