METROTECH®

850

The 850 Audio Frequency Line Tracer

- Excellent isolation from adjacent utilities
- Efficient high power transmitter facilitates long distance tracing
- Use inductively or with clamp
- Visual and audible left/right guiding system
- Digital signal strength indicator
- Automatic Sensitivity Control, no manual adjustments
- Push Button Depth Indicator for instant depth readout

Audio Frequency Line Tracer

The powerful 850 Line Tracer gives better isolation and longer range tracing of underground pipes and cables in congested areas.

- Visual and audible left/right guiding system guides the operator toward the conductor path.
- Digital signal strength indicator, an easy-to-read, three-digit, liquid crystal display (LCD) allows the operator to pinpoint the target conductor.
- Push button depth indicator—with the push of a button the LCD indicates the depth of an underground pipe or cable.
- Single control switch activates the ON/OFF, BATT TEST, and OPERATE modes, eliminating multiple settings.
- Automatic sensitivity control eliminates the need for manual adjustments reducing human error factors.

The audio frequency (AF) 850 Line Tracer is an excellent instrument for tracing in highly congested urban areas and for long distance tracing of telecommunication, power, and oil and gas transmission lines. The lower audio frequency prevents the applied signal from "bleeding" or "jumping off" onto adjacent conductors facilitating the isolation of a particular conductor in a congested area. The high power transmitter enables it to trace over much longer distances than is possible with traditional radio frequency locators.

The 850, operated from a standing position, features a left/right guidance system which directs the operator toward the conductor path. A simultaneous field strength display aids in pinpointing the conductor, and with the push of a button, the depth of the conductor appears on the LCD. The sensitivity is automatically controlled to compensate for changes in signal strength caused by changes in conductor depth and attenuation of signal over distance. This instrument is designed to minimize electrical interference.

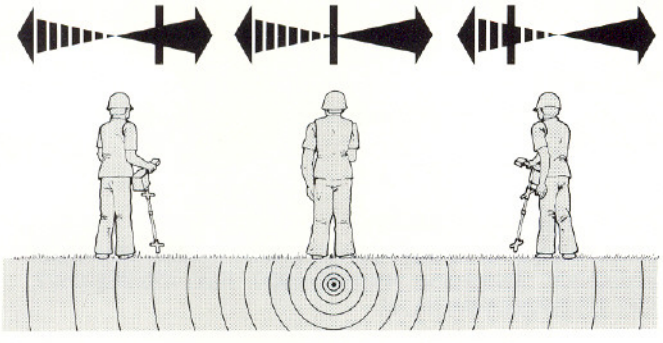
Because of the increasing density of underground utilities, the need for fast and accurate locating instruments has never been greater. The 850 AF Line Tracer offers advanced and automatic features to ensure the best possible identification and trace of continuous metallic pipe or cable.

Having positioned the transmitter and energized the target conductor (either inductively or conductively) the operator is ready to begin tracing. The receiver is held in front of the operator from a standing position.

The following features simplify the tracing operation:

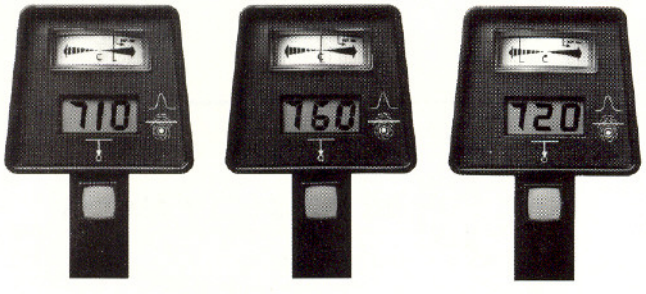
Visual and Audible Left/Right Guidance System

Directs the operator to the conductor via the position of the directional needle and the presence or absence of a steady or pulsing tone. If the needle moves to the right (the tone will be steady), the operator should move to the right; if the needle moves to the left (the tone will be pulsing), the operator should move to the left; when the needle is centered and the tone is absent the operator is over the target.



Digital Signal Strength Indicator

The Digital Signal Strength Indicator also guides the operator toward the target conductor. The LCD displays the numerical value of the field strength in small increments which assists the operator with pinpointing the target (the highest value pinpoints the position of the conductor).



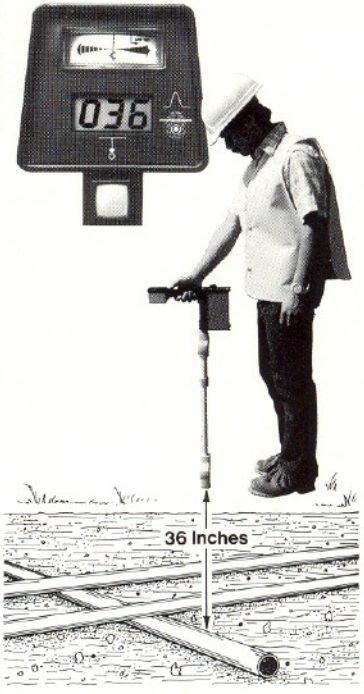
MOVE TO THE RIGHT | OVER CONDUCTOR | MOVE TO THE LEFT

Automatic Sensitivity Control

Automatically compensates for changes in signal strength caused by changes in conductor depth and attenuation of signal over distance. No manual adjustments are needed. This instrument is also designed to minimize electrical interference.

Push Button Depth Indicator

With the instrument tip in a vertical position directly over the conductor, and a push of the depth button, the depth (in inches or centimeters) is displayed on the LCD.



Human Engineered

All tracing and depth determination is made from a standing position (no stooping, squatting, or angular measurements required). Light in weight, the receiver is balanced for natural, comfortable right or left hand use, reducing operator fatigue. All instrument readouts are in line-of-sight. A single control switch activates all functions.

For your locating needs—AF or RF?

Metrotech offers both—the 850 audio frequency instrument, and the 810 radio frequency instrument. The audio frequency 850 is an excellent locator for long distance tracing and isolation of continuous conductors, such as cables, in congested areas. The radio frequency of the 810 makes it an ideal instrument for tracing water and gas distribution systems where insulators may be present and for general inductive use. The 850 is one of the few audio frequency instruments available with inductive coupling capabilities, however, the 810 would be the instrument of choice if most of your locating is being done inductively. The following table shows which instrument is best suited for your application.

APPLICATION	810	850
Power		
Direct	good	excellent
Inductive	excellent	good
Telephone		
Copper	good	excellent
Fiber Optic	good	excellent
CATV	good	excellent
Water	excellent	not rec.*
Gas		
Distribution	excellent	not rec.*
Transmisison	good	excellent

APPLICATION	810	850
Pipeline	good	excellent
Blind Searching	good	not rec.
Traffic Control	good	excellent
Grounds Maintenance	excellent	good
Railroad Communications	good	excellent
Refineries	excellent	good
Military Bases		
Pipes	excellent	good
Cables	good	excellent

not recommended if insulators are present

Technical Specifications – 850

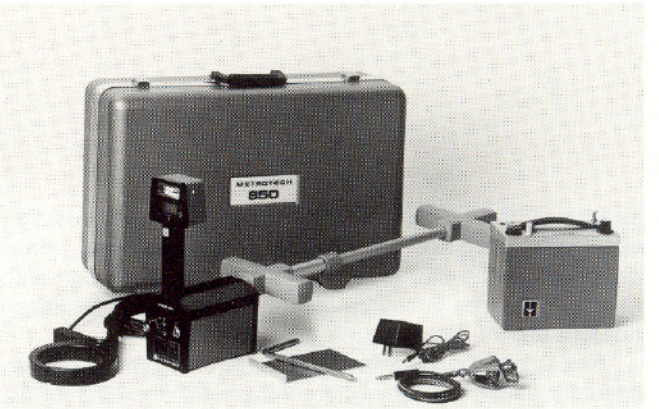
Transmitter

Nominal Output Power:	0.6W and 2W
Output Frequency:	9820 Hz ±.002%, Crystal controlled for interference resistance
Batteries:	Rechargeable lead-acid (6V) Charging is by 115 V, 60 Hz AC power source (supplied upon request), or optional 12V charger.
Impedance Matching:	Automatic, no adjustments
Weight:	5.8 lbs (2.6 kg)
Dimensions:	8″L x 4⅛″W x 6¾″H (20.3 x 10.5 x 17.2 cm.)

Receiver

Trace Accuracy:	±1 in. from 0 to 3 ft. (91 cm.); ±3% over 3 ft. (91 cm) in depth
Depth Readout Accuracy:*	±10% under normal conditions
Sensitivity Control:	Automatic, no adjustments
Depth Readout Range:	To 13 ft. (400 cm.)
Batteries:	4 NEDA 1604A alkaline (9V)
Battery Test:	Indicated on meter
Weight:	4.1 lbs. (1.9 kg.)
Dimensions (extended length):	32½″L x 7¼″W x 12¼″H (82.6 x 18.4 x 31.1 cm.)
Temperature Range:	0 to 110°F (−18 to 43°C)
Shipping Weight (gross):	23 lbs. (clamp: add 2 lbs.) (10.4 kg [clamp: add .91 kg])
Shipping Dimensions:	24¼″L x 10⅜″W x 17¼″H (61.6 x 26.4 x 43.8 cm.)

* Actual performance may be affected by improper signal drive method, concentration of utilities, poor ground conditions such as highly conductive soil, or extremes of temperature. Signal variations in large pipes can also affect accuracy.



Standard Equipment

The Metrotech Model 850 comes complete with transmitter, receiver, conductive attachments, batteries, charger, operation manual, and padded carrying case.

Optional Accessories

5120 Metroclamp for use on conductors four inches (10 cm.) or less in diameter

Vehicle-Mount Charger for charging transmitter from cigarette lighter receptacle (P/N 800B005)

Customer Service

User training, applications assistance, and servicing are available. Service centers are in Nashville, TN and Mountain View, CA.

Warranty

One year warranty on labor and material. Text available on request.

Ordering Information

For information or dealer referral, please contact Metrotech Corporation. Telephone: 415/940-4900. Fax: 415/962-9527. Telex: 6502726454MCI UW.