

# UAT-505 Underground Utility Locator Kit

## Detect and measure depth of buried pipes and cables

### Increase productivity on the job site with precise with accurate locating

The Amprobe UAT-505 Underground Utility Locator Kit is the rugged, economical solution for locating underground energized and de-energized wires, cables and pipes. The Transmitter utilizes the proven 33 kHz frequency, which is ideal for most locating applications. With the Receiver, trace the signal in Induction or Direct Test Leads Connection Modes. The Receiver features fast sound and meter response and easy depth measurements to 20 feet at the push of a button, as well as highly sensitive Power and Radio Modes which detect energized wires and radio signals on underground lines.

### Features

- **Locates** underground energized and de-energized wires and cables
- **Locates** underground metal pipes
- **Multiple tracing modes** for locating and tracing energized and de-energized utilities in a variety of applications: Power Mode, Radio Mode, Induction Mode and Direct Test Leads Connection Mode
- **Depth measurement up to 20 ft**, detect and trace utilities buried up to 100 ft deep (Direct Test Leads Connection Mode only)
- **Receiver features a high-contrast display** with an automatic backlight and semi-automatic gain control
- **33 kHz transmitting frequency:** best frequency for general locating
- **Complete ready-to-use kit:** Receiver, Transmitter, test leads, batteries and carrying case



**UAT-505**  
Underground Utilities  
Locator Kit



#### Safety Certification

All Amprobe tools, including the Amprobe UAT-505, are rigorously tested for safety, accuracy, reliability, and ruggedness in our state-of-the-art test lab. In addition, Amprobe products that measure electricity are listed by a 3rd party safety lab, either UL or CSA. This system assures that Amprobe products meet or exceed safety regulations and will perform in a tough, professional environment for many years to come.





Water, wastewater and sewage



Electrical utilities distribution



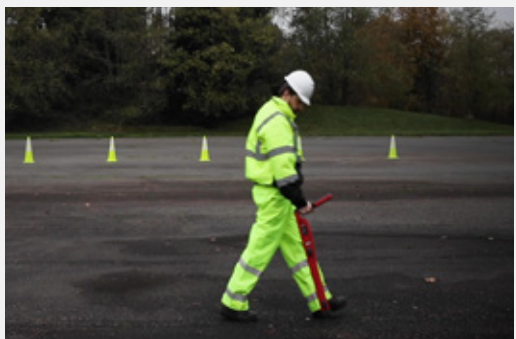
Construction



Transportation



Outdoors facilities maintenance



### Who needs the UAT-505?

- Wastewater engineers
- Pipefitters
- Plumbers
- Construction contractors
- Field engineers
- Inspectors
- Civil engineers
- Government inspectors
- 811 state surveyors

## Identify Underground Pipes, Cables & Wires

The Amprobe UAT-505 discovers the location of underground utilities such as sewer lines, power lines and water lines up to 100 feet deep, with accurate depth measurement to 20 feet when connected to the Transmitter. The Transmitter operates at a 33 kilohertz (kHz) frequency signal, which provides the most reliable results for many locating applications. The kit also comes with a connection cables and alligator clips for connecting the transmitter to the buried pipe or de-energized cable or wire to be traced.

### Expert Features for Any Situation

The UAT-505 can be used in different modes for optimal tracing in many situations.

#### Receiver

- **Power Mode** locates energized wires with a 50/60 Hz frequency. The Receiver alone detects the electromagnetic fields emitted by buried energized lines conducting currents.
- **Radio Mode** uses the Receiver to detect radio waves coming from cellular towers, radio stations, etc. that are picked up and carried by underground metal objects, such as cables or pipes.

#### Receiver + Transmitter

- **Induction Mode** uses the Transmitter to wirelessly induce a signal into a buried pipe, cable, or wire. The Receiver then detects the signal carried by the buried utility.
- **In Direct Test Leads Connection Mode**, the Transmitter is connected to the buried de-energized cables or utilities with test leads (provided there is an available access point to the utility). The Transmitter then sends a signal across the wire or pipe.\*
- If it is not possible to gain access to a cable for making an electrical contact or it is not safe to do so, the optional **Signal Clamp** provides an efficient and safe method of applying a locate signal to a cable.

**The UAT-505 can also trace non-metallic pipes in Induction or Direct Test Leads Connection Modes.** Some of these pipes have embedded metal trace that will conduct signal for tracing. For pipes without embedded metal, use a conductive tracing tape.

#### \*Note:

The UAT-500-T Transmitter **should never** be connected to an energized circuit. The Amprobe UAT-600-T Transmitter, safety rated CAT IV 600 V, can be safely used to connect to energized circuits.



### UAT-505 Kit Contents

	UAT-505
UAT-600-R Receiver	1
UAT-500-T Transmitter	1
CC-UAT-500 Carrying Case	1
TL-UAT-500 Test Leads Kit*	1
1.5 V AA (IEC LR6) Batteries (Receiver)	6
1.5 V D (IEC LR20) Batteries (Transmitter)	4
User Manual	1

- \*TL-UAT-500 Test Leads Kit includes:
- Green test lead with detachable green alligator clip
  - Gray test lead with permanently attached gray alligator clip
  - Ground stake



### Amprobe Underground Locator Kit Comparison

	UAT-505	UAT-610	UAT-620
CAT Rating	-	CAT IV 600 V	CAT IV 600 V
Transmitter frequency (direct connection)	33 kHz	8 kHz and 33 kHz	8 kHz and 33 kHz
Direct connection to energized circuits	-	•	•
De-energized circuit tracing	•	•	•
Included signal clamp	-	-	•



## Specifications

	UAT-600-R Receiver	UAT-500-T Transmitter
Operating voltage	0 to 600 V	De-energized circuit only for Direct Connection Mode
Transmitting frequency	-	33 kHz
Tracing modes	Active tracing: 33 kHz (32,768 Hz) and 8 kHz (8,192 Hz) Passive tracing: 50 / 60 Hz and Radio	<b>De-energized:</b> Induction Mode Direct Connection Mode Clamp Mode
Transmitting mode power output	-	Max. 1 watt
Output voltage	-	Max. 35 V rms
Output current	-	Max. 100 mA rms
Locating modes	Peak and Null	-
Sensitivity adjustment (gain control)	•	-
Depth measurement	Up to 20 ft (6 m)	-
Depth measurement accuracy	4 in (0.1 m) to 10 ft (3m): ± 3 % 10 ft (3 m) to 20 ft (6 m): ± 5 %	-
Sensitivity at 1 m (typical)	Power: 2 mA Radio: 20 µA 8 kHz: 5 µA 33 kHz: 5 µA	-
Display backlight	Automatic	-
Visual signal indication	-	Two LEDs indicating LO and HI signal
Audio signal indication	Increasing closer to the signal	<b>Continuous Signal Mode:</b> Continuous audio tone <b>Pulse Signal Mode:</b> Fast pulsed audio tone
Compatible receiver	-	UAT-600-R Receiver
Compatible transmitter	UAT-600-T and UAT-500-T Transmitter	-
Compatible accessories	-	SC-600 Signal Clamp TL-UAT-500 Test lead set
Display	4.3 in (109 mm), 320 x 240 BW outdoor LC-Display with auto backlight	-
Update rate	Instantaneous	-
Operating temperature and humidity	-4 °F to 122 °F (-20 °C to 50 °C), ≤90% RH	-4 °F to 122 °F (-20 °C to 50 °C), ≤ 80% RH
Storage temperature and humidity	-40 °F to 140 °F (-40 °C to 60 °C), ≤ 90% RH	-40 °F to 140 °F (-40 °C to 60 °C), ≤ 80% RH
Operating altitude	< 6561 ft (< 2000 m)	< 6561 ft (< 2000 m)
Pollution degree	2	2
IP-rating	IP54	IP54
Drop proof	3.28 ft (1 m)	-
Power supply	Six (6) 1.5 V AA alkaline batteries	Four (4) 1.5 V D cell alkaline batteries
Auto power off	15 minutes idle Will auto turn off after 15 min of no button pressing	-
Battery life	Approx. 35 hours at 70 °F (21 °C) (Typical)	Approx. 12 hours at 70 °F (21 °C) (Typical)
Low battery indication	Active symbol in upper right corner of the live screen	Both LO and HI LEDs blink every 1.5 seconds and audio sound pulses every 1.5 seconds
Measurement Category	CAT IV 600 V	-
Agency approval	CE, ENEC, UKCA, IEC	CE, ENEC, UKCA, IEC
Safety compliance	IEC 61010-1, IEC 61010-2-033 CSA/UL 61010-1, CSA/UL 61010-2-033	IEC 61010-1, CSA/UL 61010-1, IEC 61010-031, CSA/UL 61010-031 (test leads)
Electromagnetic Compatibility	IEC 61326-1 Korea (KCC): Class A Equipment (Industrial Broadcasting & Communication Equipment) [1] [1] This product meets requirements for industrial (Class A) electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and is not to be used in homes.	IEC 61326-1 Korea (KCC): Class A Equipment (Industrial Broadcasting & Communication Equipment) [1] [1] This product meets requirements for industrial (Class A) electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and is not to be used in homes.
Size (H x W x L)	Approx. 11.9 x 4.7 x 30.7 in (302 x 120 x 779 mm)	Approx. 18.1 x 3.5 x 2.6 in (460 x 90 x 65 mm)
Weight	Approx. 4.2 lb (1.9 kg) (batteries installed)	Approx. 3.9 lb (1.77 kg) (batteries installed)

## TL-UAT-500 Test Leads

	TL-UAT-500 Test Leads
Operating voltage and current	50 V max, 1 A
Leads length	11.5 ft (3.5 m)
Compatible transmitter	UAT-500-T Transmitter
Operating temperature and humidity	-4 °F to 122 °F (-20 °C to 50 °C), ≤ 80% RH
Storage temperature and humidity	-40 °F to 140 °F (-40 °C to 60 °C), ≤ 80% RH
Operating altitude	< 6561 ft (< 2000 m)
Pollution degree	2
Agency approval	CE, ENEC, UKCA, IEC
Safety compliance	IEC 61010-031, CSA/UL 61010-031
Size (H x W x L)	Approx. 9 x 3.5 x 3.1 in (230 x 90 x 80 mm)
Weight	Approx. 1.1 lb (0.5 kg)



TL-UAT-500 Test Leads Kit includes: Green test lead with detachable green alligator clip, Gray test lead with permanently attached gray alligator clip, Ground stake

## Optional Accessories

**AF-600 A-Frame ground fault locator, UAT-600-T Transmitter, SC-600 Signal clamp, TL-600-25M Extension test lead**



LCD Display with auto backlight to view clearly in bright sunlight

Detect ground faults on cables and pipes

### AF-600 A-Frame Ground Fault Locator

- **Identify** any point of leakage around a cable
- **Locate** cable and wire ground faults, sheath faults or pipeline coating defects, where the utility is in direct contact with the ground
- **Find the exact point** where metal is touching the ground and power is leaking, ie, a shield is rusted or a rubber buffer is broken, creating noise on a cable
- **Advanced technology and digital signal processing makes pinpointing process fast, accurate and clear:**
  - **Compass guidance** with numeric fault field strength indicates the direction of the fault
  - **Distance sensitive left and right arrows** guides the user to precisely follow the path of the buried utility
  - **Automatic gain control** quickly detects tracing signal and precisely adjusts the A-Frame sensitivity
  - **Adjustable volume controls**

	<b>AF-600 A-Frame</b>
<b>Tracing mode (de-energized)</b>	8 kHz
<b>Locating mode</b>	Ground fault locating
<b>Sensitivity (typical)</b>	Cable locate mode at 1 meter depth: 10 uA Fault locate mode: up to 2 MΩ fault
<b>Display backlight</b>	Automatic
<b>Audio indication</b>	Speaker indicates left/right by pulsed/continuous tone
<b>Compatible transmitter</b>	UAT-600-T Transmitter
<b>Display</b>	1.28 in, 128 x 128 BW outdoor LCD display with auto backlight
<b>Update rate</b>	Instantaneous
<b>Operating temperature and humidity</b>	-4 °F to 122 °F (-20 °C to 50 °C), ≤90% RH
<b>Storage temperature and humidity</b>	-40 °F to 140 °F (-40 °C to 60 °C), ≤90% RH
<b>Operating altitude</b>	< 6561 ft (< 2000 m)
<b>Pollution degree</b>	2
<b>Water and dust resistance</b>	IP54
<b>Drop proof</b>	3.28 ft (1 m)
<b>Power supply</b>	(6) 1.5 V AA alkaline batteries
<b>Auto power off</b>	15 minutes idle
<b>Battery life</b>	Approx. 60 hours at 70 °F (21 °C) (Typical)
<b>Certifications</b>	
<b>Safety compliance</b>	IEC 61010-1, CSA/UL 61010-1
<b>Size (H x W x L)</b>	Approx. 14 x 9 x 4.7 in (355 x 230 x 120 mm)
<b>Weight</b>	Approx. 4.2 lb (1.9 kg) (batteries installed)

**AF-600 A-Frame includes:** A-Frame Receiver, (6) 1.5 V AA (IEC LR6) Batteries, Carrying Case, User Manual



### UAT-600-T Transmitter

This intuitive Transmitter automatically chooses the correct locating function based on the connected accessory and includes selectable 8/33 kHz frequencies.

	<b>UAT-600-T Transmitter</b>
<b>Measurement category</b>	CAT IV 600 V
<b>Operating voltage/current</b>	0 to 600 V
<b>Operating frequency/tracing modes</b>	<b>Energized circuit</b> Induction mode: 33 kHz Direct connection modes: 8 kHz and 33 kHz Clamp mode: 8 kHz and 33 kHz <b>De-Energized circuit</b> Induction mode: 33 kHz Direct connection modes: 8 kHz, 33 kHz, A-Lo/A-Hi A-Frame: 8 kHz Clamp mode: 8 kHz and 33 kHz
<b>Transmitting mode power output</b>	Max. 3 watts
<b>Output voltage</b>	Max. 50 V rms
<b>Output current</b>	Max. 250 mA rms, constant current in 5 steps
<b>Mains voltage measurement</b>	0 V to 600 V, 50 Hz to 60 Hz Resolution: 1 V, Accuracy: ± 10%
<b>Resistance measurement (De-energized circuit)</b>	0 Ω to 999 kΩ Range: 0 Ω to 999 Ω (resolution: 5 Ω) Range: 1 kΩ to 999 kΩ (resolution: 1 kΩ) Accuracy: ± 10%
<b>Output hazardous voltage warning</b>	≥ 30 V rms
<b>Mains hazardous voltage warning</b>	≥ 30 V rms
<b>Operating temperature and humidity</b>	-4 °F to 122 °F (-20 °C to 50 °C), ≤90% RH
<b>Storage temperature and humidity</b>	-40 °F to 140 °F (-40 °C to 60 °C), ≤90% RH
<b>Operating altitude</b>	< 6561 ft (< 2000 m)
<b>Pollution degree</b>	2
<b>Water and dust resistance</b>	IP54
<b>Drop proof</b>	3.28 ft (1 m)
<b>Certifications</b>	
<b>Safety compliance</b>	IEC 61010-1, IEC 61010-2-033 CSA/UL 61010-1, CSA/UL 61010-2-033 IEC 61010-031, CSA/UL 61010-031 (test leads)
<b>Size (H x W x L)</b>	Approx. 14 x 9 x 4.7 in (355 x 230 x 120 mm)
<b>Weight</b>	Approx. 7.0 lb (3.2 kg) (batteries installed)



### SC-600 Signal Clamp

The Signal Clamp accessory provides an efficient and safe method of applying a locate signal to a cable, enabling the Transmitter to induce a signal through the insulation into the wires or pipes. The clamp works on low impedance closed circuits only.

	<b>SC-600 Signal Clamp</b>
<b>Measurement category</b>	CAT IV 600 V
<b>Operating voltage/current</b>	0 to 600 V, 100 A max.
<b>Operating frequency/tracing modes</b>	33 kHz and 8 kHz
<b>Signal voltage output (nominal)</b>	23 V rms at 8 kHz, 30 V rms at 33 kHz
<b>Operating temperature and humidity</b>	-4 °F to 122 °F (-20 °C to 50 °C), ≤90% RH
<b>Storage temperature and humidity</b>	-40 °F to 140 °F (-40 °C to 60 °C), ≤90% RH
<b>Operating altitude</b>	< 6561 ft (< 2000 m)
<b>Pollution degree</b>	2
<b>Water and dust resistance</b>	IP54
<b>Drop proof</b>	3.28 ft (1 m)
<b>Certifications</b>	
<b>Safety compliance</b>	IEC 61010-1, IEC 61010-2-033 CSA/UL 61010-1, CSA/UL 61010-2-033
<b>Size (H x W x L)</b>	Approx. 11.6 x 7.1 x 1.4 in (295 x 180 x 37 mm)
<b>Weight</b>	Approx. 1.9 lb (0.85 kg)

### TL-600-25M Test Lead Extension

	<b>TL-600-25M</b>
<b>Description</b>	Extension test lead, 80' (25 m)