

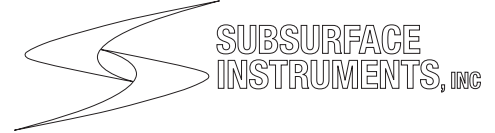


Scan for Digital Version



AQUA TRAC™

Water Leak Detector



User Manual

Instructions, Functions and Warranty Information

COPYRIGHT

Copyright © 2019 SubSurface Instruments, Inc. All rights reserved.

No part of this manual may be reproduced, copied, modified or adapted, without the prior written consent of the SubSurface Instruments, Inc.

Please contact SubSurface Instruments, Inc. to request permission for reproduction and use of this manual for training purposes.

TABLE OF CONTENTS

GENERAL INFORMATION

Table of Contents.....	03	Using the Ground Microphone	12
Introduction	04	Advanced Settings	12
Disclaimer of Liability	04	Charging the Battery.....	12
Important Notices	04	Factory Service.....	13
Prepare for Use	05	What's included.....	14
Warranty.....	05	Photos.....	15
Technical Description	06	Company Information	16
Version Summary.....	06		
Unit's Structure	06		
Basic Information	06		
Safety Warnings	06		
Technical Data Sheet.....	07		
Operation	08		
Recognizing Differences in Sounds.....	08		
Adjusting Volume	09		
Listening with the Leak Detector.....	09		
What Sounds Should I Heard	09		
Accessing Filters.....	10		
Setting Custom Filters	10		
Selecting the Correct Filter	10		
Selecting Predefined Filters.....	11		
Affecting Factors for Accurate Readings.....	11		

BROWSING TIP
Click on any TITLE to go to that page or
Click on the FOOTER to go back to
THE TABLE OF CONTENTS

INTRODUCTION

Congratulations on the purchase of your new SubSurface Instruments, Inc. Aqua Trac™ Water Leak Detector. The Aqua Trac™ is specially designed to detect water leaks on buried pipes & conducts. This device will detect water leaks through its highly sensitive microphone and advanced technology of its control board. You have chosen a quality product that is designed for years of field use without the need for annual or periodic calibration and service.

The basic principle of the Water Leak Detector's operation is as follows:

The MICROPHONE/SENSOR is placed over the ground surface or directly over the pipe, the sound created by the water leak frequency is detected and interpreted by the Control Board and displayed on the screen for the operator to determine the course of action.

To help ensure the best locating results, please read & understand the manual in its entirety before using the product.









DISCLAIMER OF LIABILITY

SubSurface Instruments, Inc. shall not be liable to Distributor, Re-Seller, or any other person for any incidental, indirect, special, exemplary or consequential damages, or injury of any type whatsoever, either caused directly or indirectly by products sold or supplied by SubSurface Instruments, Inc..

This manual contains basic advice for the operation of the Aqua Trac™. It is essential that the manual is available for the trained operator to use as a reference. You must read this manual carefully.

- Do not drop the device, the electronic components might get damaged with strong impacts.
- Limits set in the technical data sheet must not be exceeded.
- Original accessories ensure the safe operation of the equipment. The use of non-original accessories are not allowed and Void the warranty if used with this unit.
- Maintenance and repairs can only be performed by service centers authorized by SubSurface Instruments, Inc.

IMPORTANT NOTICES

-  **WARNING!** Failure to follow these warnings could result in serious injury or death.
-  **WARNING!** Only qualified and trained personnel should operate this water leak detector.
-  **WARNING!** Follow appropriate safety procedures, your company's policies and applicable safety codes and/or laws.
-  **WARNING!** Do not connect to utilities, cables or pipes without authorization and training.
-  **WARNING!** Use this tool for intended purpose only as described in this manual
-  **WARNING!** Do not expose to hazardous chemicals, hazardous gases or explosive environments.
-  **WARNING!** This tool is designed to detect sound emitted from buried pipes and utilities. There might be water leaks on buried pipes, and utilities that this instrument CANNOT detect.
-  **WARNING!** LOCATING is not an exact science. The only certain way to be sure of the existence, location, or depth of buried utilities is to carefully expose (dig up) the utility.

PREPARE FOR USE

Unpack your new Aqua Trac™ Water Leak Detector. Make sure there is no shipping damage and that all parts have been included.

This unit has a rechargeable Li-Ion battery, please charge for at least 5 hours before use.

Note: For longer battery life and reliable operation under adverse conditions, use only supplied charger and accessories provided by SubSurface Instruments, Inc.

Connect the Sensor/Microphone into the unit and ensure – by screwing the connector until the nut is secure against the unit– that the connection was successfully made.

Be aware of the headphones volume, the level is set to medium each time you re-start the unit. Avoid loud noises or hard bangs when using the unit on higher volume levels, failure to do so may result in permanent hearing damage.

REGISTER WARRANTY

THIS INSTRUMENT IS UNDER WARRANTY FOR 1 YEAR (5 YEAR*) FROM THE DATE OF DELIVERY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. WE WILL REPAIR OR REPLACE PRODUCTS THAT PROVE TO BE DEFECTIVE DURING WARRANTY PERIOD.

*BY REGISTERING YOUR UNIT ONLINE AT [HTTP://WWW.SSILOCATORS.COM/WARRANTY-REGISTRATION](http://www.ssilocators.com/warranty-registration) WITHIN ONE MONTH (30 DAYS) OF PURCHASE, SUBSURFACE INSTRUMENTS, INC. WILL EXTEND THE WARRANTY PERIOD FROM 1 YEAR TO 5 YEARS.

THIS WARRANTY IS VOID IF, AFTER HAVING RECEIVED THE INSTRUMENT IN GOOD CONDITION, IT IS SUBJECTED TO ABUSE, UNAUTHORIZED ALTERATIONS OR CASUAL REPAIR.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED. THE WARRANTY DESCRIBED IN THIS PARAGRAPH SHALL BE IN LIEU OF ANY OTHER WARRANTY, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SUBSURFACE INSTRUMENTS, INC. WILL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES.

SCAN THE QR CODE TO REGISTER ONLINE



Please Fill out all of the fields on our online registration to keep better track of your warranty and allow us to help you with any further questions or concerns.

SubSurface Instruments Team.

TECHNICAL DESCRIPTION

VERSION SUMMARY

The Aqua Trac™ has all the necessary functions for the acoustic detection of water leaks in buried pipes. Through its potent ground microphone, the noises can be heard directly from the pipe as well as on the ground. The noise level is displayed on the equipment's screen in graphical form, as well as numerically. The unit identifies frequency of the audio collected which is then transmitted into the headset, this process is an intrinsic part of the whole system. The headphones are equipped with noise isolating features to allow the user to acquire the best audio possible to pinpoint the water leak location.

The Aqua Trac™ features several specific functions for the interpretation of the results:

- The filters can be customized to limit the bandwidth by setting high frequency and low-frequency parameters (Ex: 100 Hz to 1200 Hz or 101 Hz to 2500 Hz)
- The sound level indicator represents the live audio with a graph and a numeric value on the display's screen
- The screen also displays the Battery Life indicator

AQUA TRAC™ STRUCTURE

The Leak Detector's circuitry is housed in a engineered grade plastic shell. The keypad layout allows for an easy and user friendly operation, even when the user is wearing gloves. The monitor features a backlit LCD screen with a clear display.

The connections to the ground microphone and headset are within easy access and can be turned on and off quickly.

BASIC INFORMATION

The Aqua Trac™ Water Leak Detector is an electroacoustic sound listening device, the equipment registers the vibrations of an object or pipe where a water leak is presumed to be found, the Aqua Trac™ produces a specific frequency that can be found by a trained operator.

Some of the applications are locating leaks in water distribution networks and locating leaks in service and utility pipes.

SAFETY WARNINGS

- Do not use the equipment at excessive volume, this may result in permanent hearing damage.
- Do not drop the equipment, the circuitry and components inside of the casing can get damaged. The sensor/microphone is also a delicate piece of electronic equipment, do not drop it or hit it, this can cause damage to the microphone and internal connections and will not be covered under warranty. NEVER open the housing of the unit, this will also automatically void the warranty.
- The unit leaves our facility in the original factory configuration, no need for calibration or special settings besides options available on the menu.

TECHNICAL DESCRIPTION

TECHNICAL DATA SHEET

Type:	Electronic water leak detector with electronic sensor attached to the amplifier to find water leaks on buried pipes or above ground meters & hydrants
Operating frequency:	0-3000 Hz (others on request)
Filters:	3 noise filters are pre-set in the unit and also can be customized by the user, allowing infinite combinations using the buttons located on the unit's control panel
Amplifier:	65dB provides high performance
Ingress Protection Class:	IP65 rated (unit & attachments)
Battery:	Li-Ion Rechargeable, charger included
Battery Life:	Up to 20 hours of continuous use (others on request), with multi-voltage charger jack
Display:	Graphic LCD back-lit Display, graphic indication of the selected filter, sensitivity and battery charge
Geophone Sensor:	Piezo electronic sensor, high sensitivity and resistance with protection against wind and weather. 5 feet (1.5 m) contact cable, rubber protected sensor base for unpaved ground and impacts
Activation of Sensor:	The sensor gets activated by pressing the keypad's MUTE Button, press the button to transmit audio to the headphones, depress to mute the audio.
Sensor sensitivity:	0,7 V / g
Headset:	Professional stereo headset with full over the ears soft pads. Impedance of 8 ohms
Volume control:	Press the UP and DOWN arrows on the unit's keypad
Contact rod:	Collapsible in 3 parts
Distortion:	Less than 1% (1 mV)
Operating temperature:	0° F to 140° F (-17.8° C to 60° C)
Carrying Case:	Padded case for shock and weather protection. Neck strap for field operation

RECOGNIZING DIFFERENCES IN SOUNDS

Practice listening, find an exposed pipe that's connected to a working faucet, place the sensor over the pipe and listen with the faucet shot off, now, open the faucet and listen to the sound of running water, you'll begin to recognize the difference between the two sounds. You should use the information displayed on the screen as a reference for frequency and noise levels.

Play around with the predetermined filters that come standard with the unit to learn how to isolate the sounds that are important for the water leak detection.

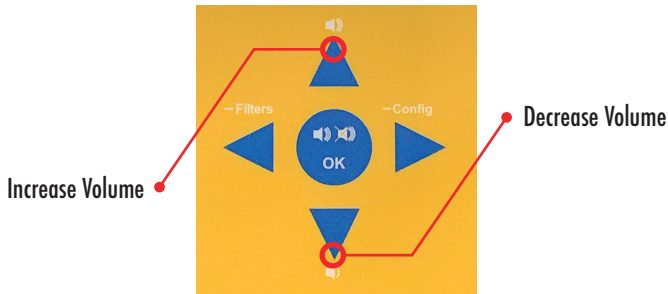


Follow the suggested steps to get your Aqua Trac™ ready for use in the field.

- Connect the Ground Microphone to the unit and secure the connection by tightening the threaded washer
- If you need to use the extension rod, thread it to the bottom of the sensor
- Plug-in the headphone jack to the unit.
- Turn the power on with the ON/OFF button located at the top of the unit.

ADJUSTING THE VOLUME

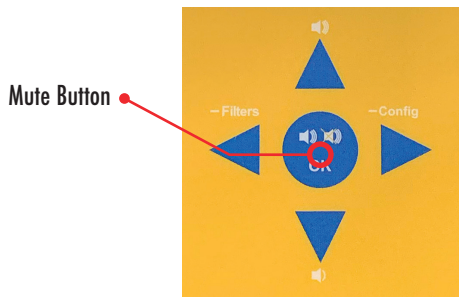
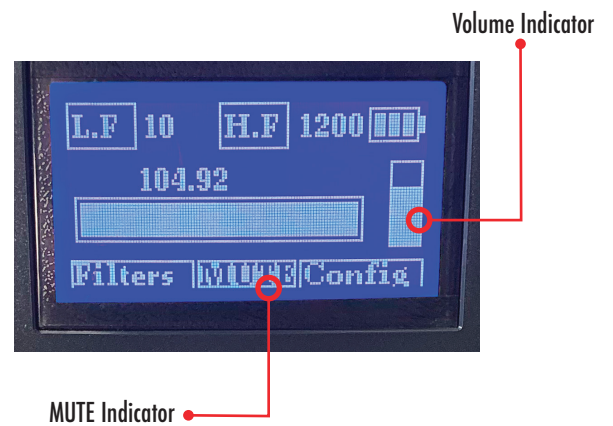
The Aqua Trac™ resets its audio to "Medium" every time the unit is turned off. When starting a new detection job, set the volume to a comfortable level by increasing or decreasing the volume with the UP and Down arrows on the Keypad. Use the Volume Indicator on the screen as a reference to determine your most comfortable volume level.



LISTENING WITH THE AQUA TRAC™

After connecting the sensor/microphone and headphones, adjust the volume of your unit, place the Sensor/Microphone over the pipe or surface where a water leak is suspected. Press the trigger to activate the sound on the headphones; as an alternative you can also press the MUTE Button on the center of the keypad.

Listen on the same spot until you acquire a constant result.



WHAT SOUND ARE YOU EXPECTED TO HEAR?

Every time the OK button is pressed you should hear sound through the headphones.

When you have the trigger pressed and you move from one location to another, you'll hear interference and uneven sounds and bangs in your headphones.

When you are listening in an specific spot you should hear a uniform background sound.

The sounds picked up by the microphone will be increased or decreased by the type of filter you have your unit set to at the time of detection and also by how much traffic and activity is around you at the time of the detection. Noisy construction environments can be a little challenging to make a successful detection.

You might have to use the unit during evening hours or at a time of less outside noises for better results.

SELECTING FILTERS

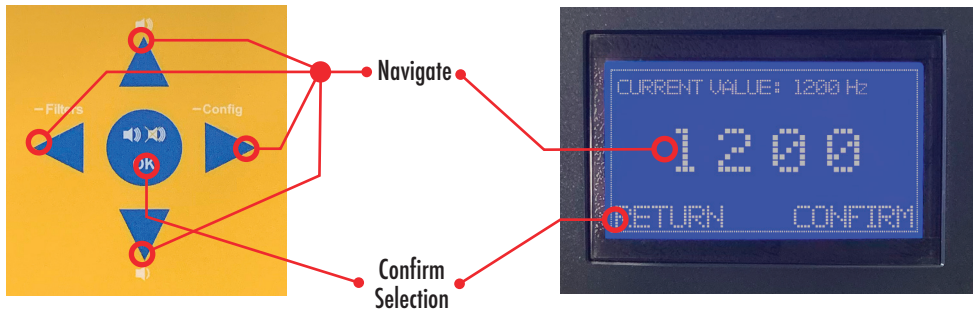
ACCESSING THE FILTERS

To access the filters' screen, press the FILTERS Button (Left Arrow) on the keypad.



SETTING CUSTOM FILTERS

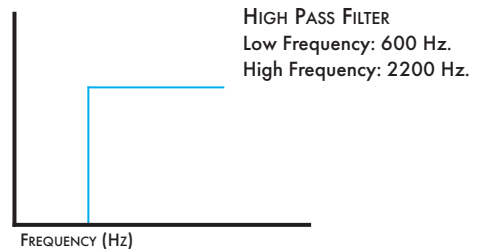
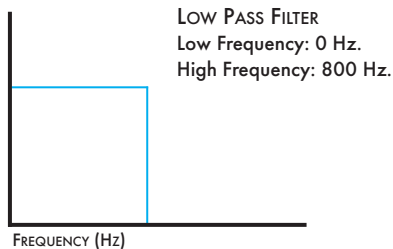
Select the frequency you want to customize, the display has 4 customizable digits, increase or decrease the number on each position to the desired frequency using the UP and DOWN arrows and navigate through the 4 digits with the LEFT and RIGHT arrows, once you've reached the desired frequency, press the LEFT arrow until it selects the word RETURN, accept the selection with the middle OK Button. Automatically, the Aqua Trac™ will make the necessary calculations locking in the selected filter.



SELECTING THE CORRECT FILTER

The selection of the appropriate filter depends on different factors such as pipe material, depth of the utility and conditions of external noise; all of these factors should be taken in consideration when choosing the correct filter for the job.

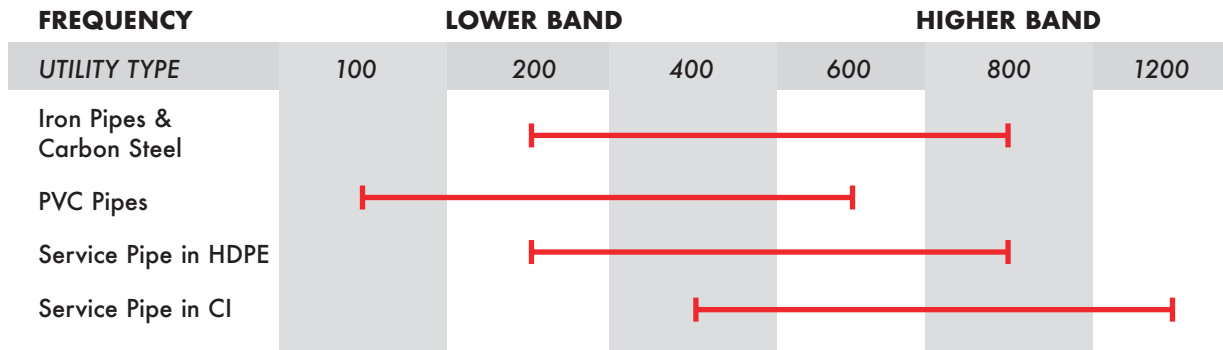
These images are a graphical representation of the changes in the frequency depending on the selected filter.



SELECTING FILTERS

SELECTING PREDEFINED FILTERS

The Leak Detector allows you to have multiple custom frequency configurations. However, it's recommended for beginners to take advantage of the PREDEFINED FILTERS offered with the unit. The next table can be used as a reference depending on the job and conditions.



FACTORS THAT CAN INFLUENCE THE SOUND QUALITY

- Whenever possible, take measurements at a time when there is little external sound that may interfere with the detection (e.g. foot steps, machines that emit vibrations, people's conversations, road traffic, etc.)
- Do not move the ground microphone during measurements.
- Always take several measurements to better qualify the suspected point of the water leak.
- Check the pressure of the water network, using a manometer, the minimum pressure required with this equipment is 55 psi (plastic pipes) and 20 psi (metal pipes), because you won't be able to hear any distinctive sound from a water leak without this minimum pressure. Very important, the greater the pressure on the water network, the deeper a water leak can be found in the supply network and the easier it is to find its location.

Note: Make some test measurements to get used to the outside or external noises and repeat the process several times on the point where a suspected leak is located, this will give you a better understanding of the sound that the leak produces against external unrelated sounds.

USING THE GROUND MICROPHONE

The Aqua Trac™ can capture the noise collected by the ground microphone.

It is advisable to know the location of the pipe underneath the pavement or floor where you suspect there is a water Leak, this will shorten the time it will take to locate the leak and will eliminate the need to have other locators on hand (e.g. Pipe and Cable Locator).

If it is necessary to use a listening rod, or there is the need for a greater range of detection; it is possible to extend the tip of the sensor and work the same as if it was a electronic listening stick. Screw the three collapsible extension rods provided with equipment to the bottom of the ground microphone.

ADVANCE SETTINGS

The Aqua Trac™ allows the user to change advanced settings under the configuration menu, these settings should only be changed by experienced users or under the supervision of technical support.

The available settings are:

- The level of sensitivity of the equipment. The equipment has 3 levels, Low, Medium and High, it is recommended to keep this setting on medium, in order to optimize the use of the equipment.
- The language of the display (usually the equipment is supplied in the language of the customer's country) the language can only be changed by SubSurface Instruments, Inc. technicians.
- The automatic filters. The product has filters permanently enabled in order to facilitate the customer's work, which include filters for the electrical frequencies of 50 Hz and 60 Hz, as well as filters for frequencies higher than 9000 Hz.

CHARGING THE LI-ION BATTERY

The Aqua Trac™ uses a rechargeable battery. To recharge the battery, simply plug the charger that is supplied with the equipment in the unit's AC power input, located on the side of the plastic enclosure. Contact SubSurface Instruments, Inc. if you have any problems re-charging the Li-Ion Battery

The total charging time is between 7-9 hours.

 **WARNING!**

Attention:

Never leave the charger connected to the device for longer than 12 hours due to the risk of equipment damage, battery damage and loss of warranty.

FACTORY SERVICE

The SubSurface Instruments, Inc. Aqua Trac™ was designed for dependable operation without periodic adjustment and/or calibration. If, however, your Detection Unit is not working properly, return it to the factory for repair. A RMA (Return Material Authorization) is not required, but there is some necessary information needed to ensure your unit is repaired and returned properly. The required information may be obtained by phone, e-mail, fax or through our website.

Telephone: 920.347.1788 or 855.422.6346
Fax: 920.347.1791
Email: info@ssilocators.com
Web: <http://www.ssilocators.com/service>

SEND IT PREPAID TO:

SubSurface Instruments Inc.
Attn: Service Department
1230 Flightway Dr.
De Pere, WI 54115 USA

We will repair and ship the instrument back, or advise you if the instrument is irreparable.

NOTE: There is a minimum charge for repair and handling for units not under warranty.

When shipping your instrument, be sure to include:

1. Your contact information: name, address, email and phone number.
2. A brief description of the problem.
3. A return shipping address & billing mail address & any special shipping instructions.

PACKING INSTRUCTIONS:

Place the unit to be repaired in the original shipping carton, or equivalent sturdy container. Add packing material around all sides of the unit. Seal the shipping container with strong tape. Failure to package the equipment properly may result in a voided warranty. Mark the shipping container:

FRAGILE ELECTRONIC EQUIPMENT

WHAT'S INCLUDED

The Aqua Trac ships inside of a hard padded case for shock and weather protection.

Includes:

- The "Aqua Trac" Amplifier
- Headphones with 3.5mm jack
- Magnet
- Shoulder strap
- Electronic sensor with 5' (1.5m) of cable
- Collapsible contact rod (3 pieces)
- Li-Ion battery Charger
- User Manual



WHAT'S INCLUDED



Hard IP68 Certified ABS
custom carrying case included.

AN INNOVATIVE DESIGN FORCE IN SUBSURFACE DETECTION & LOCATION

SubSurface Instruments is an innovating force that engineers, manufactures and distributes high-frequency and magnetic locators, pipe and cable locators, water leak detectors, leak correlators, bore hole gradiometers, pipe inspection cameras and specialty locators.

SSI's most recent innovation, the AML or All Materials Locator, locates buried PVC pipes, PE Pipes, plastic or nearly any other subsurface object more efficiently than ever before. Using patent-protected technology re-engineered by SSI, the AML detects buried PVC pipes and almost every object that other locators can't find.

SSI features a vast line of professional underground and underwater locator products for every need including surveying, construction, ordnance removal, excavation and exploration. Our customers from the petroleum, water, sewer, power, telecom, cable and gas industries rely on SSI's high quality and dependability to make crucial measurements in the world's most challenging conditions. SubSurface Instruments' products are proudly made in the U.S.A. and offer an industry-leading warranty.



SubSurface Instruments, Inc.

1230 Flight Way Drive

De Pere, WI 54115 USA

855.422.6346 toll free

920.347.1791 fax

info@ssilocators.com

www.ssilocators.com