

Frequently Asked Questions

What makes the Well Watch/Well Sounder products unique?

The Well Watch/Well Sounder product line was created to offer an affordable easy to use instrument to measure the depth to a well water level. Our products combine portability, low power requirements with advanced features such as logging, remote data transmission, and alarms. The ergonomic design allows the user to take measurements from a comfortable position and in good lighting.

How fast do I get a reading of my well depth?

Once the probe is attached to the well and the power is turned on, it takes approximately 3 seconds on most wells to get a depth reading.

How accurate is the reading?

The specified accuracy is achieved provided certain conditions are met. Since the distance calculation is determined by timing the returned echo, it is important that a free path is available for the pulse to travel to the water surface and return. It is possible that an obstruction such as torque arrester or centering ring on a pump pipe can cause a premature echo. It is also possible that a breakout or large fracture opening can also cause a false echo. Ordinary pump piping and wiring will not interfere with the measurements.

The accuracy is also dependent on the sound speed in the well. Since the sound speed is determined by the temperature, the average temperature must be specified correctly. The error is approximately .1%/°F.

Can I use the Well Sounder on an open well?

The Well Sounder was designed to work on a closed well. A simple piece of rigid card board or plastic held against the opening is enough to meet this requirement. In many cases it will work on the open well but may be off by a couple feet.

Does the Well Sounder work on wells with the pump installed?

Yes. The sound pulse used for measuring is not disturbed by the presence on pump wiring or piping.

What if there are guard rings or torque arresters on the pump line?

The Well Sounder will read past most guard rings and torque arresters with little signal attenuation. Some torque arresters may block more than 90% of the well opening and may cause problems.

Will the Well Sounder work with the pump running?

Generally yes. If however the pump is exceptionally noisy and or the water level is near or below the pump, it is possible that the noise from the pump could interfere with the depth measurement.

Does the Well Sounder work on larger diameter wells?

The Well Sounder with the standard probe works on wells up to 18" in diameter. However, as the well diameter increases, the signal strength weakens and becomes more susceptible to pump noise and imperfections in the well. It is recommended that on wells larger than 8" that a sounding tube be used.

How deep will the Well Sounder measure?

The maximum range is 2000 feet for model 2010 and the 2010 PRO. This may not be achievable on all wells however. On a good 6" well with tight clean casing all the way down and little or no obstructions along the way, maximum range can be achieved. On uncased wells drilled through porous stone or with irregular walls, or any obstructions such as spacer rings or couplings the range will be reduced.

Does the Well Sounder work in wells with perforated casing?

If the perforations are exposed (above the water line) and the exterior of the casing is very porous like crushed stone, then the perforations will dampen the sound pulse and there will be no reflection for the Well Sounder to detect. In this case, the Well Sounder will track the descending water level until it gets to the perforations and then stick at the start of the exposed perforations as the water level continues to descend.

Does the Well Sounder work in crooked wells?

Yes. The sound pulse used to measure the depth will even go around corners and obstructions which block less than 90% of the well opening.

What are the well access requirements?

The probe is tapered and easily slips into a standard 1/2" vent opening or other opening up to 1 1/4" without an adapter. An air tight connection is not required but most of the casing should be closed. An open casing can be measured by placing a cover of cardboard or any other material over the opening with a hole in it large enough to slip the probe in.

How does temperature affect the depth reading?

The Well Watch/Well Sounder products calculate the depth by measuring the time it takes for a sound pulse to travel down the well shaft, bounce off the water and return. Since sound travels at a faster rate through warmer air, the well sounder must compensate for the reduced time. In most wells, the temperature a short distance from the surface is fairly constant and varies with geographic location. Near the surface, the temperature varies with daily swings and sun loading. The Well Watch/Well Sounder probe includes a temperature sensor to measure and compensate for near surface variations. Deep temperature is compensated using the deep well temperature entered by the user. [Click here for the US Groundwater Temperature map.](#)

Where do I find product specific information?

The Product User Manuals contain all the informational and operational details for the Well Watch and Well Sounder. The manuals are available in PDF format and available on our website for reference and/or download.

How long do the batteries last?

The Well Sounder 2010 hand held unit includes 6 AA alkaline batteries for portable operation. The unit will run for approximately 80 hours while taking continuous readings at a 1 second pulse rate. This is the worst condition. When the power saver mode is used, taking and recording readings at a 1 minute rate, the unit will run for approximately 540 hours, or over 22 days.

Is the logged data lost if the batteries go dead?

No. The data is stored in non-volatile flash memory. The data is not lost or corrupted on power loss or other user functions such as powering on or off, or changing modes. The only way to lose data is to use the "clear data" function.

What does the logged data look like?

The log data is stored as a simple fixed format ascii text file which can be opened with any common program such as Notepad as shown here. It can also be imported directly into Excel to perform secondary calculations and plotting. The data is fixed formatted, meaning that for a particular configuration, each line has the same number of characters and each column is in the same location. After the date and time, each column is preceded with a character indicating its contents. In the example, ID is the well ID assigned by the user, D is the depth, T is the probe temperature, F is the totalized flow through the optional flow meter, B is the battery voltage, G is the signal strength, and R indicates any errors detected by the well sounder.

How do I access the logged data?

There are three ways to access the stored data on the Well Sounder 2010 Pro: The first way is from the display screen. Pressing the "DISP" button brings up the data screen. The user may then cycle through the stored data using the "UP" or "DOWN" keys on the keypad.

The second way to access the data uses a USB connection to a computer. When connected to a computer with the USB cable, the Well Sounder will show up as a mass storage device and show the data files available. These files can be simply copied from the Well Sounder to your computer directory then deleted from the Well Sounder just like any external drive. The files are simple fixed format ASCII text files which can be opened with any common program such as Notepad or Excel.

The third way to access the data requires an RS232 connection. This can be a direct connection to a laptop or remote transmission device. Using a laptop, a simple set of commands entered through a standard terminal emulator allows the user to program the Well Watch/Well Sounder as well as cause it to transmit its data. The data can then be stored in a log file by the terminal emulator.

What happens when the log memory is full?

When the log memory is full, the sounder stops recording new data and preserves the first data points. The Well Sounder 2010 PRO will continue to record data in its extended data memory up to 2GB, and be accessible with the USB connection.

Why does the unit need the time set when the power is turned on?

The lithium battery needs to be replaced. This is a common type 2032, 3 volt lithium coin cell. The unit will continue to operate without the lithium battery but the time and settings will have to be reset every time the power is turned on.

What if the well contains a constant pressure pump system with the accumulator tank in the well?

The in well accumulators tend to block the well shaft entirely. If this is the case then the Well Sounder will be unable to find the distance to the water past the accumulator.

Can the Well Sounder measure past a pit-less adapter?

Yes. The common side mount pit-less adapter typically does not block a significant portion of the well opening and will not interfere with the depth sensing. Some pit-less adapters, however, are recessed into the well and do block most of the opening. These installations may be more difficult. There are two ways to handle these cases: The probe can be lowered into the well and seated on the access hole through the pit-less adapter. A probe extension cable is available for this purpose.

Can the Well Sounder be used on hand dug wells?

Hand dug wells are often fairly large and irregular, and as such may cause problems for the Well Sounder due to multiple or weak reflections. Some work and some do not. However, in any difficult to measure well, a small tube can be installed specifically for measurement. A 3/4" PE pipe can be used for up to 1000' provided splicers do not restrict the ID.

Can I use the Well Sounder to measure the water level in a tank?

There are three issues here. First, the Well Sounder is designed to be used in a constant diameter pipe. Tank measurement is generally into a large opening which would create multiple reflections a hence an uncertain reading. Second, the minimum measurement distance is about 9 feet, so unless the sounder is mounted at least 9 feet from the maximum water level, it would not be useful. And third, the sensing probe is not designed for use with any pressure. Both sides of the probe must be maintained at atmosphere. This being said, it is possible to install the sounder on a sensing tube above the tank extending 10 feet above the maximum water level and down to the lowest level to be measured.

My sounding tube is 3/4" PVC schd 80 with threaded couplings every 20ft. The Well sounder reads the depth at 20'. Why?

The pocket created at each joint is significant compared to the inside diameter of the PVC pipe, and therefore causes the pulse to reflect at each coupling. You will notice that if the min range is increased to 25ft, the depth will jump to 40ft. And when increased to 45ft, the depth will jump to 60ft etc. In many cases, after the pulse has passed the nearby stronger reflections, the stronger reflection from the water will dominate and the depth will jump up to the water level.

How long does it take to get my product once it is ordered?

Eno Scientific makes every effort to keep finished product on the shelf. An order placed online should be shipped within 24 hours during business hours. If the product is not in stock, you will be notified by a Customer Service Representative with the expected delivery date. All orders are shipped via UPS Ground from North Carolina.

What is included when I order the Well Watch or Well Sounder?

The Well Sounder ships with everything needed to start taking measurements. The Well Watch unit comes with the display unit, the probe, and the wall adapter. The Well Sounder comes with the hand held display unit, the probe, 6 AA batteries, protective hard carry case, groundwater temperature map, quick start guide and owner's manual. The user manual is also available for download from the web site. [Click here for the Product Manuals.](#)

What is the product warranty?

Eno Scientific warrants to the user that all products manufactured by Eno Scientific, will be free from defects in workmanship and materials for 1 year from the date of shipment.