A QUICK GUIDE TO INSTALLING AND UNINSTALLING THE LOGGER

Installing the Logger

Open the water meter box lid cautiously. If the lid is metallic and is in full sun, it may be too hot to handle with your bare hands. Also, there is a small chance of finding bees, other insects, lizards or small mammals (typically rodents) inside. If you cannot see inside the meter box clearly, use a flashlight to illuminate the interior before reaching inside.

Record the meter ID number in writing or with a camera. This number is almost always printed on top of the flip-up lid that protects the plastic cover on the meter register. It may also be printed on the inside of the meter cover.

Record the logger ID, if you have more than one. It should be found near the end of the logger cable. It may also be found on the cable near the logger and/or on the top or bottom of the logger. If possible, take one picture that shows the meter ID, the logger ID, and the current meter reading. Otherwise, record this information in two pictures.

Record the date, time and location of the logger deployment. Also record any other relevant observations, such as whether there is water in the meter box or signs of leaks.

Place the bottom of the logger (black side with strap loops) against the side of the meter. The upper side of the logger should be roughly even with, or slightly below the top of the meter. Use the straps to hold the logger in place. One of the attached straps is non-stretchy Velcro, and the other is elastic with a piece of Velcro "hooks" sewn on. Wrap the non-stretchy strap around the meter head and then stretch and attach to the other strap using the Velcro.

If you find this process difficult, attach the two strap ends together to make a loop that is a bit smaller than the meter head. Then stretch the loop around the meter head so that the logger cable is pointing up and the top side of the logger is at or a bit below the top of the meter.

NOTE – Many water meters now have Itron or other automatic meter reading (AMR) devices attached to the side of the meter. You can try putting the straps around the water meter, passing between the Itron and the meter body, but it may be easier to wrap the straps around both the meter and the Itron. This potential need is why the straps are fairly long.

The logger's exact location and orientation is not critical, as the logger contains three highly sensitive magnetometers. Therefore, do not worry about the angle of the cable from the logger or the exact height of the logger. In general, the logger should be slightly above the level between the "wet" or bottom half of the meter and the "dry" or upper half of the meter. (Note – if you are logging a Neptune meter, we do recommend a specific orientation. See ***LoggingNeptuneMeters.PDF*** for details.

Record the meter reading with a camera. We highly recommend writing it down as well. Note the units (gallons, thousands of gallons (Kgals), cubic feet (cf), hundreds of cubic feet (Ccf), liters, or 1,000 liters.

Next, attach the battery cable to the logger cable to start the logger. Some logger and battery cable 5-pin connectors have non-continuous "split" threads and a "key" to assure proper alignment. Push the two connectors together and then rotate the silver rings a quarter turn to screw them tight and create a water-proof connection.

Other cables lack the split threads and key and simply screw together to create a water-proof connection.

Place the battery or the waterproof box containing the batteries in the bottom of the meter box. NOTE – If you are using a disposable battery such as a 9V "transistor" battery, we recommend placing it and the end of the battery cable in a Ziploc-type plastic bag.

For the logger to learn the meter's parameters and begin to record data, water must be sent through the meter at a rate fast enough to cause the register's magnetic fields to revolve. The minimum rate required depends on the meter, but half a gallon per minute should suffice. If the meter isn't already turning and you have access to an outdoor spigot, turn the water on and let it run for a few minutes until the logger lights indicate it is recording data (see below). If the meter is not running and you have no way to turn on a tap, the logger will set the parameters at the first sustained water use. However, your log file will begin at that time, not when the logger is initially powered up.

NOTE – If the meter indicates no water uses are currently taking place but you are able to open a tap, consider filling a container of known quantity (e.g., a 5-gallon can) or until the meter indicates a given amount of water has been used, and record the time and volume. While this is not necessary, it provides a double-check on the subsequent calibration of the meter trace.

Once power is applied to the logger and the logger is attached to a meter, the two LED lights inside the logger will illuminate. (NOTE – For loggers with translucent blue cases, you will see the lights shining through the case. For loggers in black opaque cases, the lights will shine through the two lenses on the top of the case.) The amber light indicates the strength of the magnetic signal received from the meter. On unknown meter types, we suggest placing the logger in such a way as to maximize the brightness of the amber light, preferably a constant amber signal over a blinking one.

The red light is dual purpose: it will be lit at full strength while in learning mode; when not fully lit the red light shows pulse rate synchronized with the magnetic field emitted by the meter. This pulse rate usually indicates a fraction of a measured unit. Once you see the red light pulsing, the logger has learned the meter's parameters and you can now stop any temporary water flow through the meter.

Close the lid. If the logger will be left in place for an extended period of time and the meter has an AMR device like an Itron, you may want to secure the lid. See HowToSecureBox.PDF and DoNotTouch.PDF.

Removing the Logger

Take the same pad of paper or logger sheet, a pen, and optionally, a Smartphone, tablet, laptop or digital camera, a flashlight, and sun shade to the meter box.

Carefully remove the meter box lid, taking the same precautions as before. Disconnect the battery cable from the logger. If the cables are of the "split thread" style, unscrew the metallic rings so that the white dots are realigned and then firmly pulling the cable connectors apart. With the other type of cable, simply unscrew the two cable ends from each other. The resulting loss of power will end the logging session.

Immediately record the meter reading by taking a photo and writing it down, as per the instructions above. Also record the time, unless the meter photo includes a time stamp.

Remove the logger and the battery. Record date, location, and any other relevant observations.

Replace the meter lid and take all equipment with you.