



cool technology for hot water.

www.aquanta.io

Aquanta by Sunnovations Inc.

www.sunnovations.com

Installation Instructions



For online instructions go to: <https://portal.aquanta.io/setup>

Tools Needed:

- Phillips screw driver
- Flathead screw driver
- Pipe wrench or large pliers
- Needle nose pliers (may be helpful)
- Rag
- Smart phone or laptop with Wifi

Components That May Be Needed:

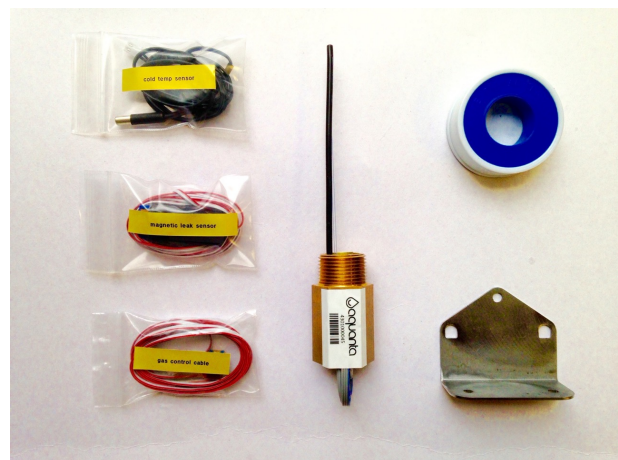
- Replacement Temperature & Pressure Relief Valve (see Part I, number 1)
- Washing machine hose and bucket (see Part I, number 4)
- Hack saw or other pipe cutter (see Part I, number 5)
- CPVC slip coupling (see Part I, number 5)
- Blow torch/solder (see Part I, number 5)

Parts Included:

1. Aquanta Controller



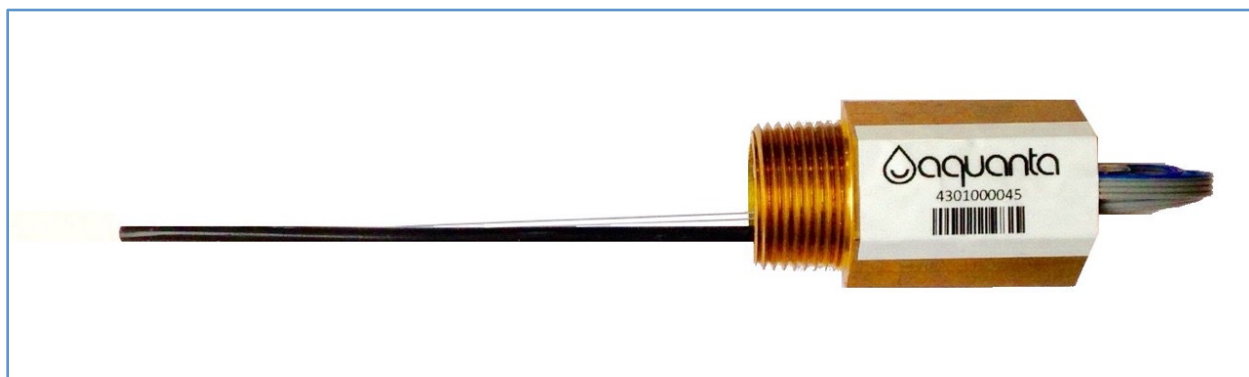
2. Enthalpy Sensor
3. Leak Detection Sensor
4. Cold Water Inlet Temperature Sensor
5. Teflon thread-sealant tape
6. Mounting Bracket (Gas Version Only)
7. Self-Drilling Screws (Gas Version Only)
8. Communication cable (AV Gas Version Only; not pictured)



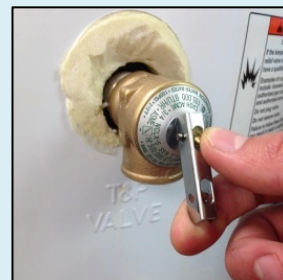
Part I: Enthalpy Sensor Installation

The Enthalpy Sensor is how Aquanta determines the energy used in a water heater, and is integrated into a lead-free brass fitting with male/female threading. It also measures the temperature at the top of the water heater through a temperature sensor embedded in the fitting. The Sensor is designed to be installed in the Temperature and Pressure (T&P) relief valve port of a storage water heater; this 3/4" port is a standard feature found on the top or the side of nearly every water heater available in the North American market. The T&P valve itself is re-inserted into the fitting after the Sensor's installation.

As shipped, inside the fitting there is a wire wound around a spool/weight, which is protected by a food-safe, biodegradable, water dissolvable material. The spooled wire will unfurl inside of the water heater when the T&P valve is inserted into the fitting, as the T&P valve probe will "poke" the spool into the water. The wire will hang from the "stick" inside the water heater, and the protective plug will quickly dissolve in the water.



1. **Very Important for safety:** Turn off electricity to water heater by switching the correct (often double) circuit breaker to "OFF".
2. Turn off the house (cold) water main valve. Just turning off the inlet valve to the water heater usually does not allow fast tank draining, as cold water will flow backwards via mixing valves elsewhere in the house.
3. To verify proper operation of the Temperature and Pressure (T&P) relief valve prior to Enthalpy Sensor installation, we recommend testing it by opening the lever several times. Beware of hot water exiting the drain pipe, and catch in a bucket if necessary. It is not uncommon for the T&P valve to continue to drip afterwards, especially with older valves. In that instance, it will need to be cleaned or replaced with a new T&P valve which can be found at most hardware stores.



4. Drain enough water to remove the T&P relief valve, usually 7 gallons or less for side-mounted T&P valves and only a few gallons for top-mounted T&P valves (to empty water from connected piping). There are generally two ways:

- a) If there is a drain pan attached to a drain, just open the water heater drain valve and make sure water falls into the pan and drains.
- b) If no drain pan exists or the pan is not connected to a drain, connect a hose to the drain valve (such as the washing machine hose shown or garden hose) and drain water into a bucket.



Important Tip: To drain the water heater, air needs to be let into the tank. Do this by opening the lever on the T&P valve, and you will hear a “glug” sound as air enters. When you stop hearing the “glug” sound, the water level has reached down to the T&P valve. Keep draining a little more to make sure the water level is below the valve opening.

5. With a pipe wrench or large pliers, remove the drain pipe connected to the T&P valve. Note that in some situations this will require de-soldering or cutting a drain pipe. Next remove the T&P valve from the tank. Inspect and clean the T&P valve. A clogged T&P valve should be replaced.

6. Add 4 wraps of included pipe sealing tape (clockwise) to the male threads of both Aquanta sensor *and* T&P valve.

7. Thread the Enthalpy Sensor into T&P port, and tighten very securely into place with pipe wrench or large pliers. Try to avoid the gripping on the face with the flat cable to avoid risk of damaging the sensor.

8. The Enthalpy Sensor wire is wrapped around a spool inside the fitting. With T&P valve probe or other skinny, **non-sharp** object, gently push the sensor into the tank. Sensor wire will unfurl once it is free inside tank.

Note: To protect the Sensor wire from being damaged, a small white plug is set behind the spool. This is made of food-safe, biodegradable and water-soluble (starch-based) material, and will quickly dissolve when it comes in contact with the water inside the tank. There is no need to remove it.

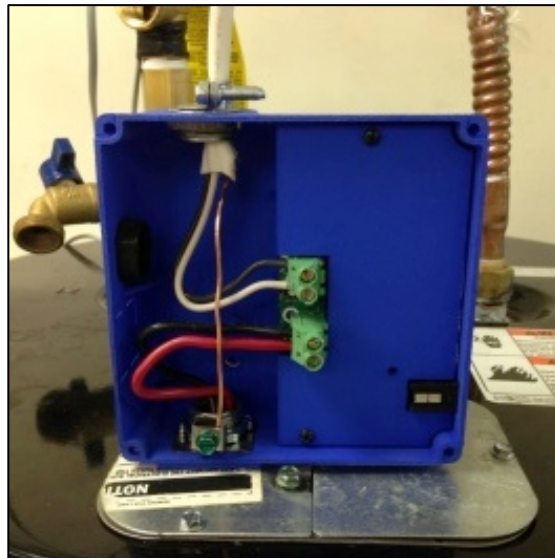
9. Thread in the T&P valve in the female end of the Enthalpy Sensor fitting and tighten into place. Replace any drain piping.



10. Turn on the water main valve and open a “hot” faucet elsewhere to let air escape out of the partially emptied tank.

Part II: Aquanta Controller Installation

The Aquanta Controller is the brains of the system, containing its electronics, sensor connectors and wifi communications module.



1. Be sure electricity to tank is **still off** at the breaker.

Part II(A): Electric Water Heater Version

2. Using screwdriver, remove the water heater's top cover plate, then remove wire nuts from copper wires. Remove wire or conduit clamp from cover plate.

3. Straighten any wires with bent ends, and cut so a straight $\frac{1}{4}$ " section of bare copper remains. Shape them pointing upwards.

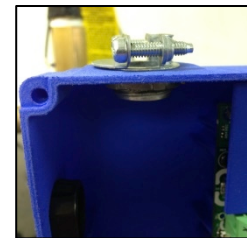
4. Option 1: Mount the cover plate onto the conduit fitting at the bottom of the Aquanta Controller, orient the Controller and tighten the nut. Next, lower the Controller over the 2 copper wires coming from the water heater and then secure the cover plate with the screws. The Controller is now mounted on the tank and the ground contact is established.



Option 2: If above method is not possible, the conduit fitting can be taken from the Controller. Mount conduit nipple using nut (provided) on cover plate so threads extend upward, and pull wires up through nipple. Replace cover plate and screw down. Next, mount Aquanta on nipple, placing the grounding bracket (with green screw) over nipple, and secure down by tightening nut by hand. You can secure even tighter by pushing on nut with a screw driver.

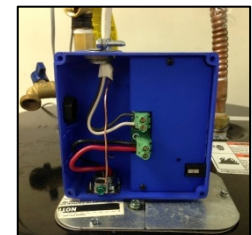


5. Mount your existing wire/conduit clamp in the Aquanta top opening.



6. Starting with the wires connected to the water heater, secure them into the lower terminal block (there is no polarity).

7. On the incoming wires, measure how far down the ground wire (typically bare copper) needs to go to reach the grounding bracket, but do not clamp in place yet, but first connect the two incoming wires into top terminal block (there is no polarity). Next, attach the ground wire last for to allow most flexibility in accessing the terminal blocks.



8. Screw on Aquanta cover with Phillips screw driver.

Part II(B): Natural Gas Tank Versions

1. Verify if your gas valve is the electronic style, such as the picture on the left. Aquanta cannot interface with the older mechanical style valves (picture on right).

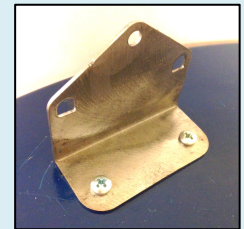


2. For Atmospheric vented tanks, turn the knob on your gas valve to **OFF**.

For Power-vented tanks, unplug the tank from the power outlet.

3. Find a spot for the Controller on top of your tank, within 2 feet of the T&P valve. The Enthalpy Sensor, installed in to the T&P valve port, has a 30" cable which needs to reach the Controller.
4. Holding the L bracket in place, mark the locations of the two screw holes, and drill two 1/8" pilot holes.

5. Use the two 1/2" Phillips head screws (silver colored) to secure bracket in place.



6. Place the Controller on the bracket as shown, and use the black colored Phillips screw to secure the box in place.



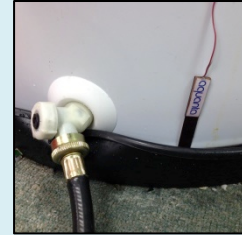
7. For Atmospheric vented tanks, attach communication cable from Aquanta's top port to the port on the gas control valve marked "COM".

For Power vented tanks, no communication cable is necessary. Keep Aquanta unplugged until after sensor is installed.



Part III: Sensor Connections

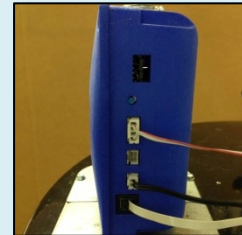
1. Place the leak detection sensor near bottom of tank, which has a magnetic strip so it can be easily attached to the bottom of the tank.



2. Attach temperature sensor to the incoming/cold water line as far from the tank as possible by wrapping with electrical or Teflon tape.

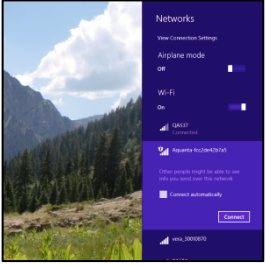
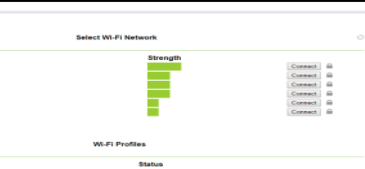
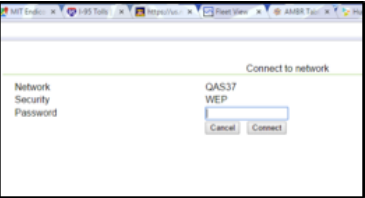
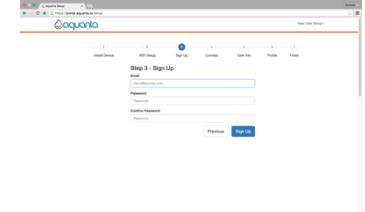


3. Plug in all three sensors to Aquanta box. From top to bottom they are:
 - Leak sensor (4-pins)
 - Not used (2-pins)
 - Cold water temperature sensor (2-pins)
 - Aquanta sensor (4-pin RJ jack)



4. Turn electricity back on at the circuit breaker. The LED should come on the Aquanta Controller; it will blink indicating network connection still needs to be established.

Part IV: Wifi Setup

<p>1. Verify Aquanta is powered and ready to connect, shown by a blinking green light when powered on.</p>	
<p>2. On your smart phone or other connected device, find your Wifi networks icon (as if you were at a coffee shop logging onto a new network), and select the network called “Aquanta xxxxxxxx”.</p>	
<p>3. On many devices (including iOS devices), a web page automatically appears with the available Wifi networks. If the web page to the right does NOT appear, open an internet browser, type 192.168.0.1 in the web address bar, and you will see this web page.</p> <p>Click “Connect” by selecting your home Wifi network.</p>	
<p>4. Enter the Wifi password for your home Wifi router. Aquanta will now save this password and use it to connect your Wifi network. The light on the Aquanta Controller should turn solid green, indicating it is connected and in monitoring mode. Green LED means that the tank will be activated/powered.</p> <p>NOTE: your phone or laptop should return to your home Wifi network once Aquanta reboots. If for some reason it does not, try disconnecting from the Aquanta Wifi network or rebooting your computer.</p>	
<p>5. You are now finished with the Aquanta unit installation.</p>	
<p>6. Next go to the Aquanta portal to register a user account and connect to the Aquanta unit. Go to:</p> <p>https://portal.aquanta.io/setup</p>	

Thanks and enjoy your Aquanta unit!