

Air Energy™ Heat Pump Water Temperature Sensor Replacement Kit

WARNING

FOR YOUR SAFETY: This product must be installed and serviced by a professional service technician, qualified in heat pump installation and maintenance. Improper installation and/or operation could create an electrical hazard which could cause property damage, serious injury, or death. Improper installation and/or operation will void the warranty.

These instructions are to be used with the following Air Energy Replacement Kit: R3006800 -- Water Temperature Sensor Assembly, Air Energy AE-Ti Heat Pump

WARNING

If the information in these instructions is not followed exactly, an electrical fire or shock hazard may result causing property damage, severe personal injury and/or death.

This document gives instructions for installing the water temperature sensor assembly on all Air Energy Model AE-Ti pool/spa heat pumps.

These instructions were written with safety as the priority and must be followed exactly. Not following these procedures or taking shortcuts may increase the risk of personal injury. *Read through the instructions completely before starting the procedure.*

Before starting the procedure, use the parts list at the back of these instructions to identify the parts in your kit. If any parts are missing, please call your local Air Energy dealer or distributor for assistance. If they cannot supply you with what you need, please contact the International Service Department at +1.800.822.7933.

1. Disconnect Heat Pump from System Plumbing

WARNING SHOCK HAZARD!

Turn off all switches and the main breaker for the circuit supplying power to the heat pump and the filter pump before starting the replacement procedure. Failure to comply may cause a shock hazard resulting in severe personal injury or death.

1. Turn off all switches and the main breaker that supplies power to the heat pump. Also, be sure to turn off the main breaker supplying power to the filter pump.
2. If isolation valves are installed in the plumbing to the heat pump, turn them to the off position.

3. Disconnect the heat pump from the plumbing by loosening the unions at the inlet and outlet connections of the unit.

CAUTION

Some water will drain from the heat pump when the connection is broken. If the heat pump is installed indoors, in order to prevent potential water damage to property, make appropriate provisions to drain the water in a manner that will not cause any damage to the surrounding property.

2. Remove Front Panel from Heat Pump

Perform the following procedure to remove the front panel from the heat pump. The panel will not be completely removed, only removed from the frame and moved to the side to allow access to the wiring behind the panel.

1. Remove the six (6) screws from around the perimeter of the top panel. These screws hold the top to the frame of the evaporator coil.
2. Remove the three (3) screws that hold the front panel of the heat pump to the base.
3. Lift the front panel enough so that the bottom of the panel clears the inlet and outlet connections on the heat pump. The front of the top panel will be lifted along with the front panel. See Figure 1. Remove the front panel and move it as far to the right of the heat pump as the flexible conduit will allow.

NOTE If flexible conduit was not used in the original installation, the conduit may need to be cut in order to move the front panel. Zodiac Pool

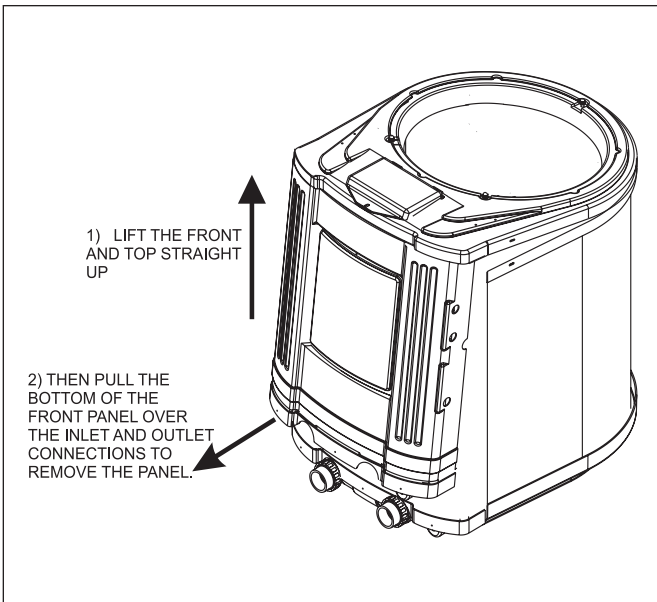


Figure 1. Removal of Heat Pump Front Panel

Systems, Inc. suggests replacing hard pipe conduit and glued connections with flexible conduit and water tight removable connections at this time for ease of future serviceability.

4. Set the top panel back in place on the frame of the heat pump.

3. Disconnect Water Temperature Sensor Wire Leads from Heat Pump

NOTE The water temperature sensor wires are connected to different components on newer models.

3a. Older Air Energy™ Models

1. Lift the smoked plastic cover and remove the six (6) screws that mount the control panel to the top panel.
2. Lift the control out of the control pocket.
3. Remove the blue wires from the T1 and T2 connections on the back of the control.

NOTE These wires were black on earlier models of the Air Energy™ heat pumps. Be sure to disconnect only the wires attached to the T1 and T2 terminals on the controller.

4. Feed the wires through the hole in the bottom of the control pocket and set the control back in the control pocket.

3b. AE-Ti Models

1. Remove the service access panel by removing the four (4) screws holding it in place.
2. Remove the one (1) screw that secures the junction box cover to the junction box and set it aside.

3. Remove the two (2) wires from the blue 2-position terminal block in the upper right hand corner of the power interface board. See Figure 2.
4. Feed the wires through the hole in the bottom of the component compartment/junction box.

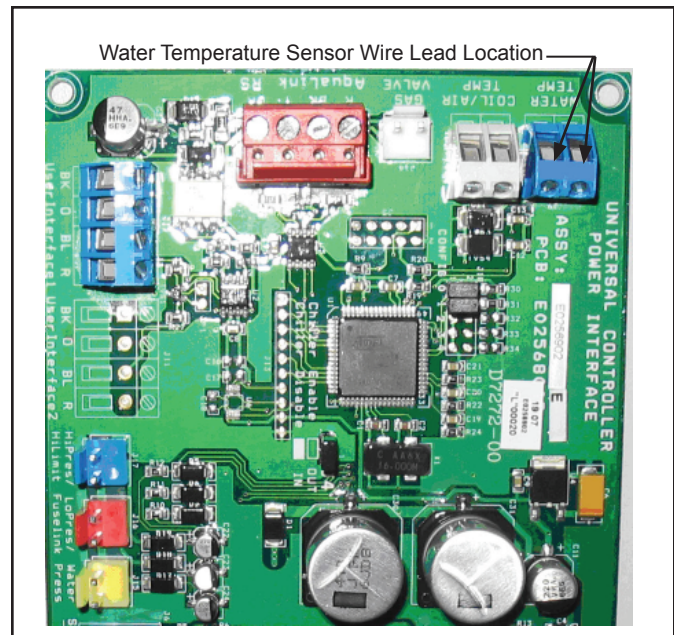


Figure 2. Removal of Water Temperature Sensor Leads

4. Remove Water Temperature Sensor Assembly

4a. Older Air Energy™ Models

1. On older models it is not necessary to remove the water sensor. The new sensor provided in this kit will be installed in a different location.
2. Cut the wire ties that bundle the sensor wires with the rest of the wires in the heat pump. Be careful not to damage any of the wiring or its insulation.
3. Cut the water sensor wires just past the cork tape. See Figure 3.

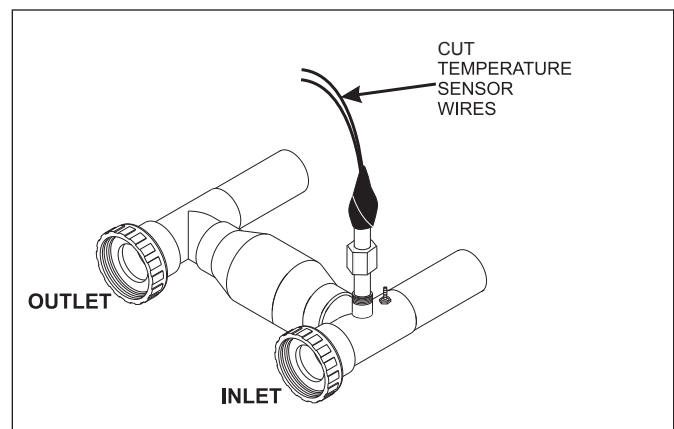


Figure 3. Location of Water Sensor (Older Models)

4b. AE-Ti Models, Serial Number Revisions K-P

1. Loosen the hose clamp holding the water sensor in place.
2. Remove the sensor from the PVC piping.
3. Cut the wire ties that bundle the sensor wires with the rest of the wires in the heat pump. Be careful not to damage any of the wiring or its insulation.

4c. AE-Ti Models, Serial Number Revisions Q through Current

1. Loosen the hose clamp holding the water sensor in place on the heat exchanger.
2. Remove the sensor from the heat exchanger.
3. Cut the wire ties that bundle the sensor wires with the rest of the wires in the heat pump. Be careful not to damage any of the wiring or its insulation.

5. Install the New Water Temperature Assembly

5a. Older Air Energy™ Models

1. Drill an 11/32" (8.73mm) hole through the top of the PVC pipe just behind the bypass assembly. See Figure 4.

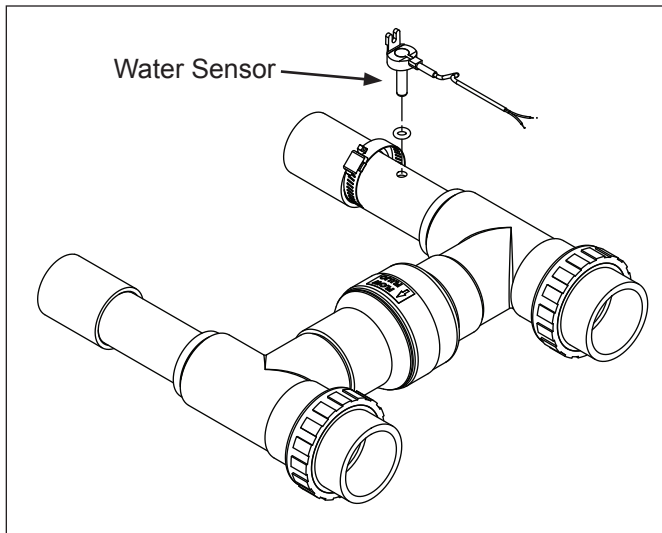


Figure 4. Water Sensor Installation (Older Models and AE-Ti Models K-P)

NOTE Be careful not to drill all the way through the PVC pipe.

2. Make sure the o-ring is firmly and properly seated on the temperature sensor.
3. Install the temperature sensor in the hole in the PVC.
4. Install the hose clamp over the sensor and tighten.
5. Route the wires along a convenient wire path to the heat pump control pocket. Do not route the sensor wires in parallel with high voltage wires; segregate the sensor wires from high voltage

wires. Use the wire ties provided in the kit to bundle the wires neatly along the path. Make sure that the wires are routed such that they are not damaged by any sharp edges or hot surfaces.

6. Push the ends of the water temperature sensor wires through the hole in the bottom of the controller pocket.

NOTE On earlier versions of the controller the T1 and T2 connections are 1/4" tabs. This kit contains both 1/4" and 3/16" mating female connectors.

7. Depending on the tab size on the controller, crimp a female connector to each of the temperature sensor wires.
8. Connect the wires to the T1 and T2 terminals on the back of the controller.
9. Place the controller back into the controller pocket.
10. Use the six (6) screws provided in the kit to remount the controller to the pocket on the top panel.

5b. AE-Ti Models, Serial Number Revisions K-P

1. Install the new temperature sensor in the hole in the PVC.
2. Re-tighten the clamp.
3. Route the wires along a convenient wire path to the component compartment/junction box. Do not route the sensor wires in parallel with high voltage wires; segregate the sensor wires from high voltage wires. Use the wire ties provided in the kit to bundle the wires neatly along the path. Ensure that the wires are routed such that they are not damaged by any sharp edges or hot surfaces.
4. Connect the wires to the blue 2-position terminal block on the upper right-hand corner of the power interface board. (See Figure 2 or the wiring diagram on back of the service access panel.)
5. Replace the junction box cover.
6. Replace the service access panel and secure it with the four (4) screws removed earlier.

5c. AE-Ti Models, Serial Number Revisions Q through Current

1. Install the new temperature sensor in the hole in the heat exchanger. See Figure 5.
2. Re-tighten the clamp.
3. Route the wires along a convenient wire path to the component compartment/junction box. Do not route the sensor wires in parallel with high voltage wires; segregate the sensor wires from high voltage wires. Use the wire ties provided in

