

AquaCal®

APPLICATION BULLETIN

#0008

Convert Heat Pump using an HP7 board to HP10

REQUIRED - EQUIPMENT

HP7 to HP10 Conversion Kit #STK0253

Convert a Heat Pump equipped with an HP7 board to an HP10 board

It may become necessary to retrofit a heat pump with an HP7 board (4 button display) using an HP10 board (dial display). This can be done using conversion kit #STK0253.



Failure to heed the following will result in injury or death.

- Installation to be performed by qualified individuals only.
- Follow all National Electric Codes (NEC) and / or State and Local guidelines.
- Deactivate power to heat pump before performing this operation.

PLEASE NOTE:

Installation should only be performed by a properly trained and qualified technician familiar with HVAC equipment repair.

Do not attempt to use this controller for Reversing, Heat & Cool, Icebreaker, or Chill only models,

Do not attempt to use this controller for models requiring dual thermostat controls, or models using the FS2 option.

1. Before proceeding:
 - Turn off power at the breaker or disconnect and ensure power is off at the unit by testing with a suitable meter.
 - Check the control board will fit in your particular heat pump. The new control board is approximately one inch taller and one inch wider than the original board.
 - For some legacy models it may be necessary to move the metal divider between the low voltage and high voltage portions of the electrical enclosure. The divider is considered a safety feature of the equipment. Do not remove and fail to replace the divider. Do not attempt to do move the divider unless properly qualified..
 - The mounting holes are exactly the same on the new board.
2. Tag and label each wire before disconnecting it from the controller board. (Masking tape and fine tip sharpie work well for this). If your unit has wires connected to "REV", you have a reversing model and cannot use this controller.
3. Remove all wires.
4. Remove the screws securing the board, remove the HP7 control board and mount the new board. It may be helpful to take several close up photos of the new control board before installing to make it easier to connect the wiring to the proper terminal.

5. Using the wire adapters provided reconnect all wiring.
 - "24 VAC" to "24 VAC"
 - "COMP" to "COMP"
 - "FAN" to "FAN"
 - "FS1" to "FS"
 - "DS" to "DS1"
 - "WS" to "WS1"
 - If your unit has a jumper connected to "LP", discard the jumper. Then connect the "HP" wire to "HP / LP".
 - If your unit is equipped with an "LP" switch, the "LP" switch and "HP" switch must now be wired in series. See **Figure 1**.
 - Cut off one wire connector from the "HP" switch and one wire connector from the "LP" switch..
 - Connect the remaining wires to one of the adapters provided and attach this assembly to "HP / LP".
 - Discard the spade connectors that were just cut off.

6. Install the blue temp sensor provided in the kit in the “Water In” PVC pipe, inside the cabinet near the primary water temp sensor.
 - a. Carefully drill a 3/8” hole near the existing water temp sensor, a small step drill bit is recommended. See **Figure 2**.
 - Be careful not to over drill and make the hole too large. Use a sharpie to mark a stopping point.
 - Make sure that there is sufficient clearance to install new hose clamp.
 - Ensure that the sensor is far enough inside to put the panel back on.
 - b. Remove any burrs from the pipe before installing a new sensor using sand paper.
 - c. Attach sensor using a new clamp. See **Figure 3**.
 - d. Snug but do not over tighten hose clamp.
 - e. Activate circulation pump and check for leaks.

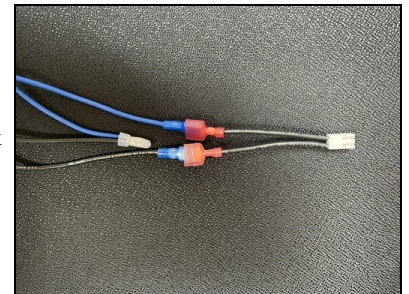


Figure 1 - Connecting Wires

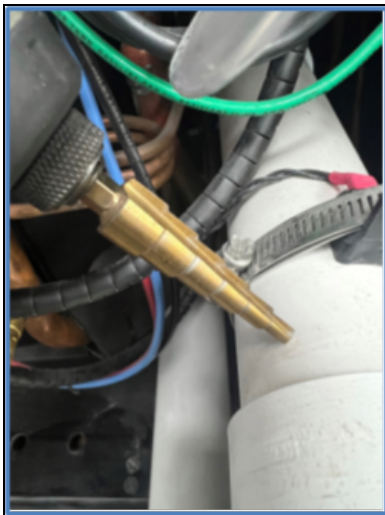


Figure 2- Drill Hole for Sensor



Figure 3- Clamp on Sensor

7. Route the new water temp sensor into the electrical panel and connect to "WS2". Using the tie wraps provided secure the wires so they do not touch or chafe on any refrigerant piping or sharp edges.
8. Secure the other temp sensor, provided in the kit, to the suction line (the larger copper refrigerant line) near the compressor as shown. See **Figure 4, Figure 5, and Figure 6**.



Figure 4 - Sensor on Suction Line



Figure 5- Applying Wrap to Sensor



Figure 6- Wrap Applied

9. Route the new defrost temp sensor into the electrical panel and connect to "DS2". Using the tie wraps provided, secure the wires so they do not touch or chafe on any refrigerant piping or sharp edges.
10. Remove the old display panel.
11. Install the new display panel, being careful to route the cable in the same location as the original. Secure the cable as needed to prevent chafing or the fan blade from hitting it.
12. Reinstall panels, restore power, and test operation.