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UPC GEO Pump Controller

Summary:

In some cases, the UPC GEO pump controller can be affected by transient or stray voltages on the secondary voltage (24VAC) supplied by the heat pump. In rare instances where this situation has occurred, a wall transformer may be installed to isolate the controller from the heat pump controls. In addition, grounding should be verified.

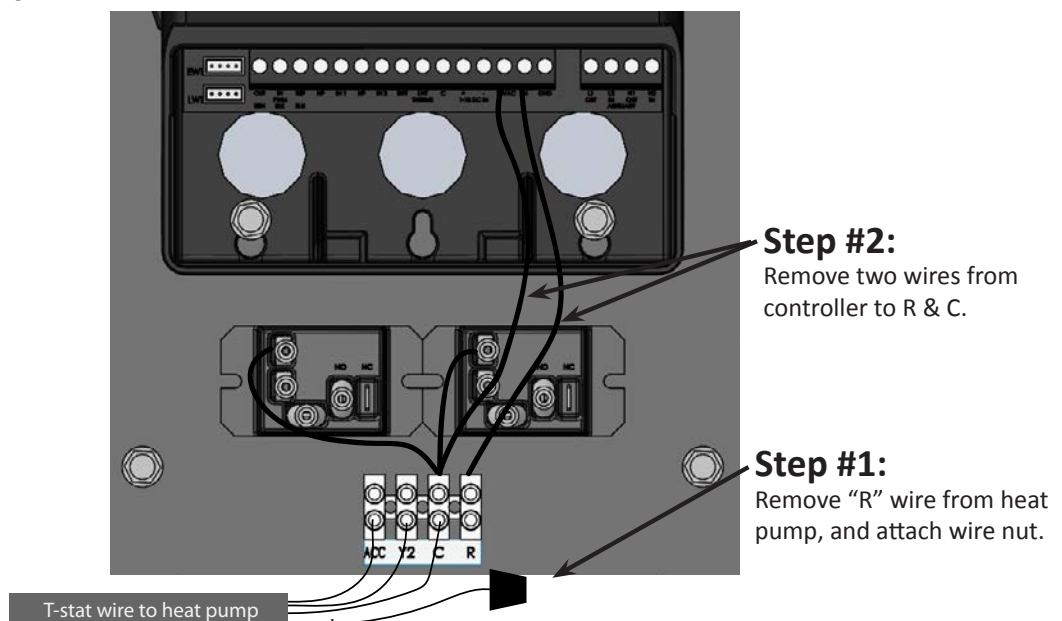
Background:

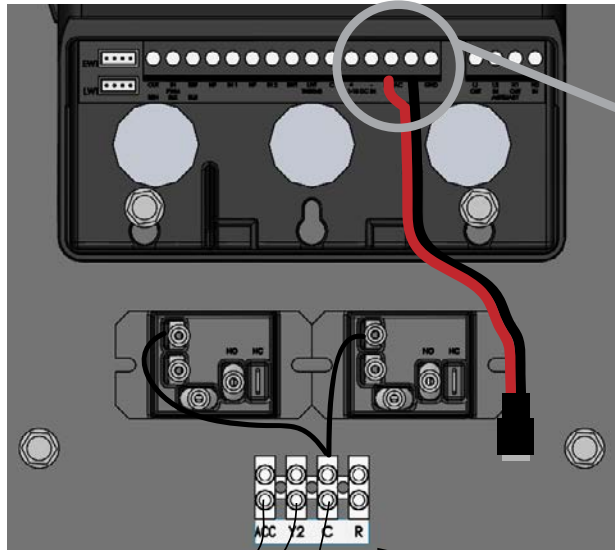
Most North American HVAC control systems use a transformer to supply 24VAC to relays, controls, and thermostats. In some cases, full or half-wave rectified circuits, power surges, brown-out conditions, and transient voltages can cause a disturbance on the 24VAC power connections. If the “dirty power” on the 24VAC line is bad enough, it can cause a device powered by this connection to act erratically, or even fail prematurely. Geo-Flo has found a handful of installations where the UPC GEO controller has locked up or exhibited a blank screen. Although this is not a common occurrence, it is difficult to isolate the problem, especially when an intermittent power fluctuation or occasional transient voltage is found on the line.

Corrective Action:

No corrective action is required if the controller has not experienced a lock-up or failure. For controllers that have failed, or for areas subject to voltage fluctuations, brown-outs, or systems that may have potential interference with other devices, a wall transformer is recommended for powering the UPC GEO controller to isolate the controller power from the secondary transformer in the heat pump. NOTE: If a wall transformer is used with the UPC GEO controller, all inputs to the controller must have isolation relays as shown below (isolation relays are standard with panel mount pressurized flow centers and non-pressurized variable speed flow center kits).

If it has been determined that a wall transformer is needed, the “R” terminal at the flow center terminal strip should be disconnected from the heat pump transformer. The other wires must remain connected. Steps for installing a wall transformer are shown below.





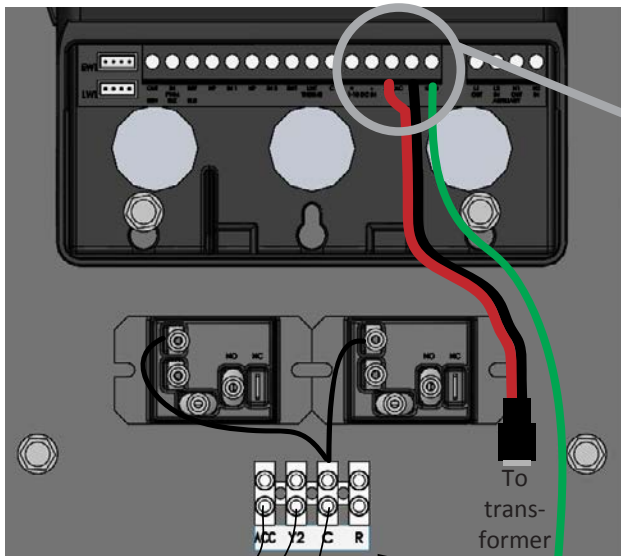
T-stat wire to heat pump

Step #3:
Connect red & black wires to controller



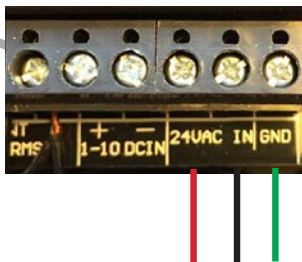
Step #4:
Plug the transformer into the barrel connector.

Connected to controller (step #3)



T-stat wire to heat pump

To pump Ground



Step #5:
Connect GND terminal to pump ground

NOTE: Two-pump flow centers should already have the ground wire connected to the second pump, since the controller has terminals for input/output to this pump, and there is a ground connection to the left of the pump terminals. However, a single pump flow center may not have the ground attached to the controller, and should be added to help minimize interference.