HVAC Controls

Standard Zoning Troubleshooting Guide

For use with the following zone panels:

ZP2-HC
ZP3-HCMS
ZP3-HPS

www.iohvaccontrols.com
For Technical Support Call Toll Free: 866-225-5032

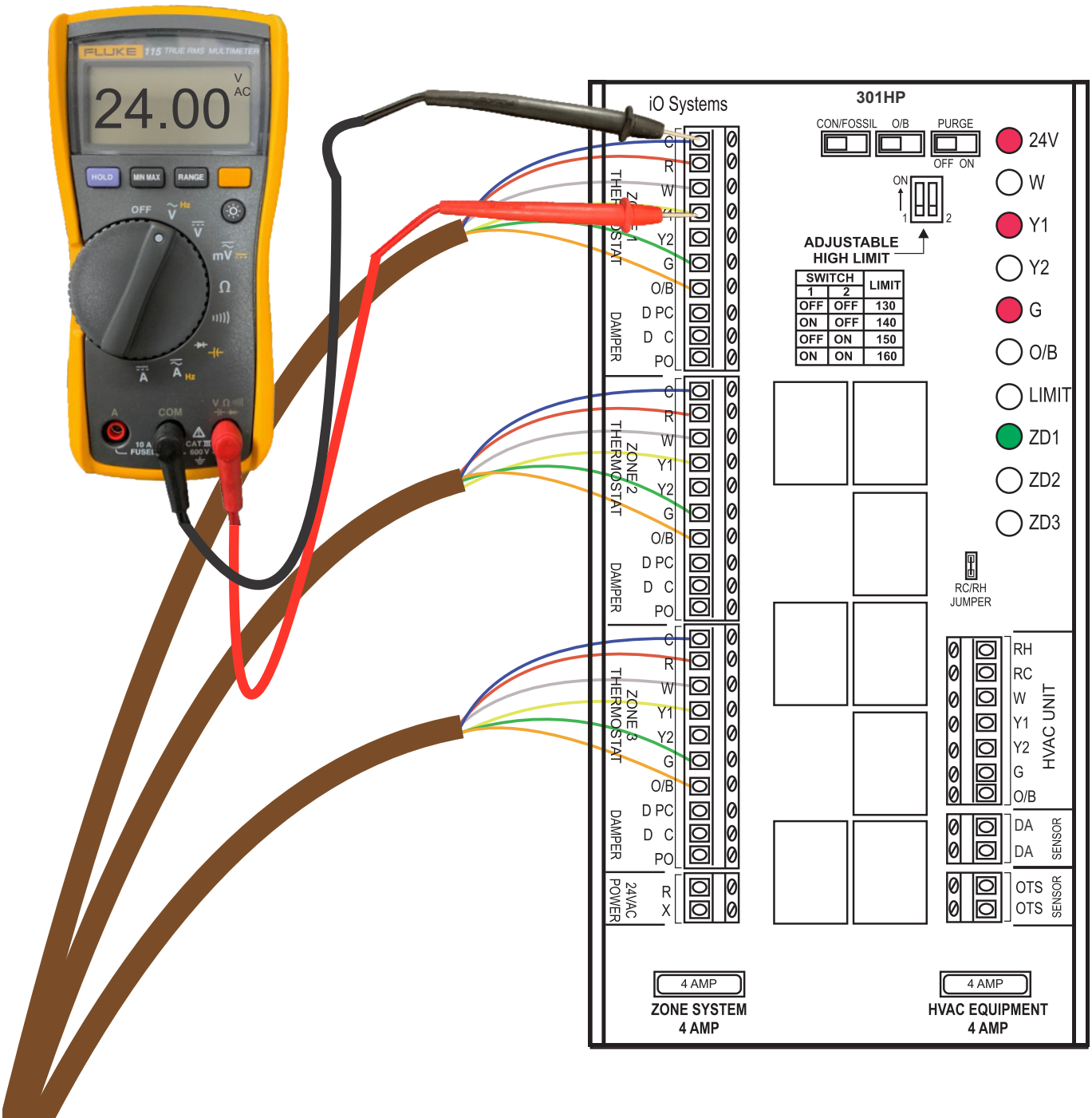
LED Indication/Definition

LED Type	Indication
24V LED	ON = Dry Contact output from the "HVAC Unit" terminals OFF = No output from the "HVAC Unit" terminals
Equipment LEDs Y1, Y2, W1, W2, O/B, G	ON = Dry Contact output from the "HVAC Unit" terminals OFF = No output from the "HVAC Unit" terminals
LIMIT LED	ON = Discharge Air Sensor connected at the "DA" terminals OFF = No sensor connected at the "DA" terminals BLINKING = Discharge Air Sensor is tripped on Hi Limit or Low Limit
Zone Damper LEDs ZD1, ZD2, ZD3	ON = Zone Damper is Open OFF = Zone Damper is Closed

Thermostat Terminals

If a zone thermostat is calling, but the board is not acknowledging the call:

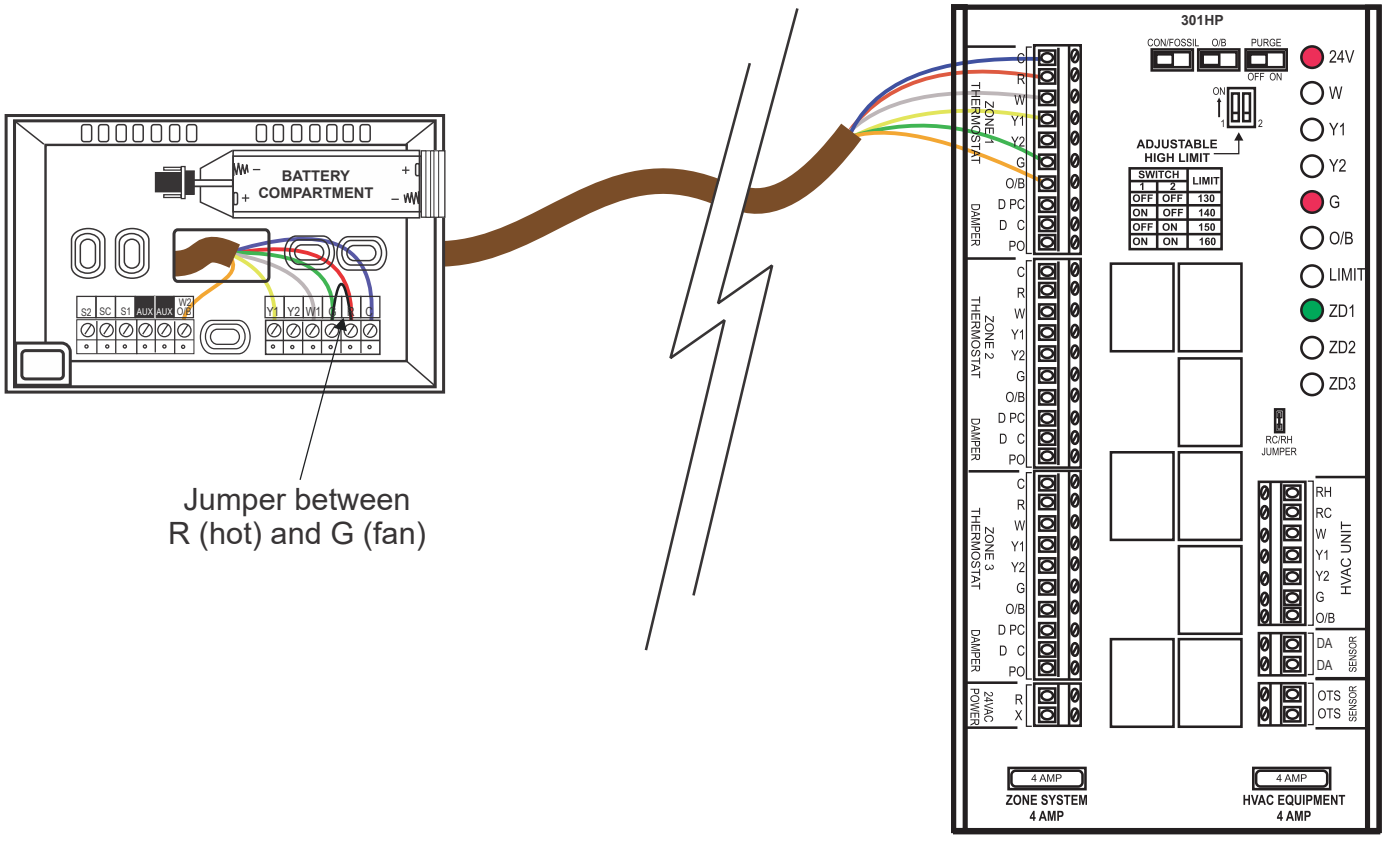
Use a multimeter to check the voltage on each zone thermostat terminal with respect to C (common) while all thermostat wires connected. If the zone's damper LED is lit, you should read 24Vac on the thermostat terminals whose corresponding LED is lit.



Thermostat Terminals cont.

If the voltage readings are not what was expected, it's likely there is a thermostat issue, a wiring issue or an issue with the wire itself.

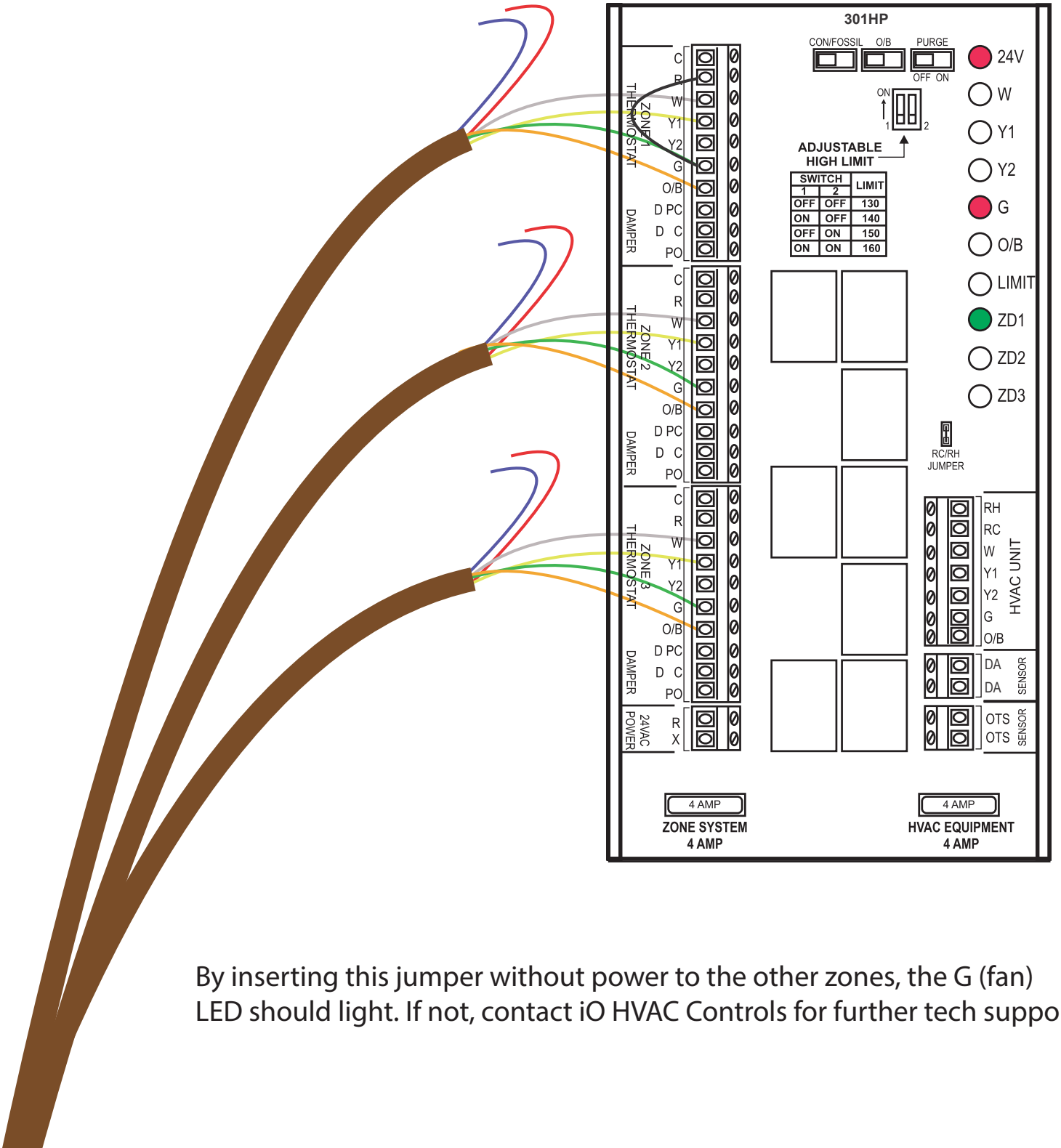
- Double check the wiring between the zone thermostat in question and the zone panel
- Make sure all of the thermostat settings are configured correctly. Thermostats on dual fuel systems are still configured as heat pumps with electric backup
- Put a jumper at the thermostat subbase and confirm the reading at the zone panel
- Check for a short in the thermostat wire
- It's possible that the thermostat is defective



If there are voltage readings seen on the appropriate thermostat terminals, but there isn't the expected LED indication, confirm that there are not contradicting thermostat calls. Be sure the zone in question is the only thermostat making a heating or cooling call on the system.

Thermostat Terminals cont.

As a final method of testing the zone panel's thermostat terminals, remove the R (hot) and C (common) from all zones. Place a jumper between R (hot) and G (fan) on the zone in question.



By inserting this jumper without power to the other zones, the G (fan) LED should light. If not, contact iO HVAC Controls for further tech support.

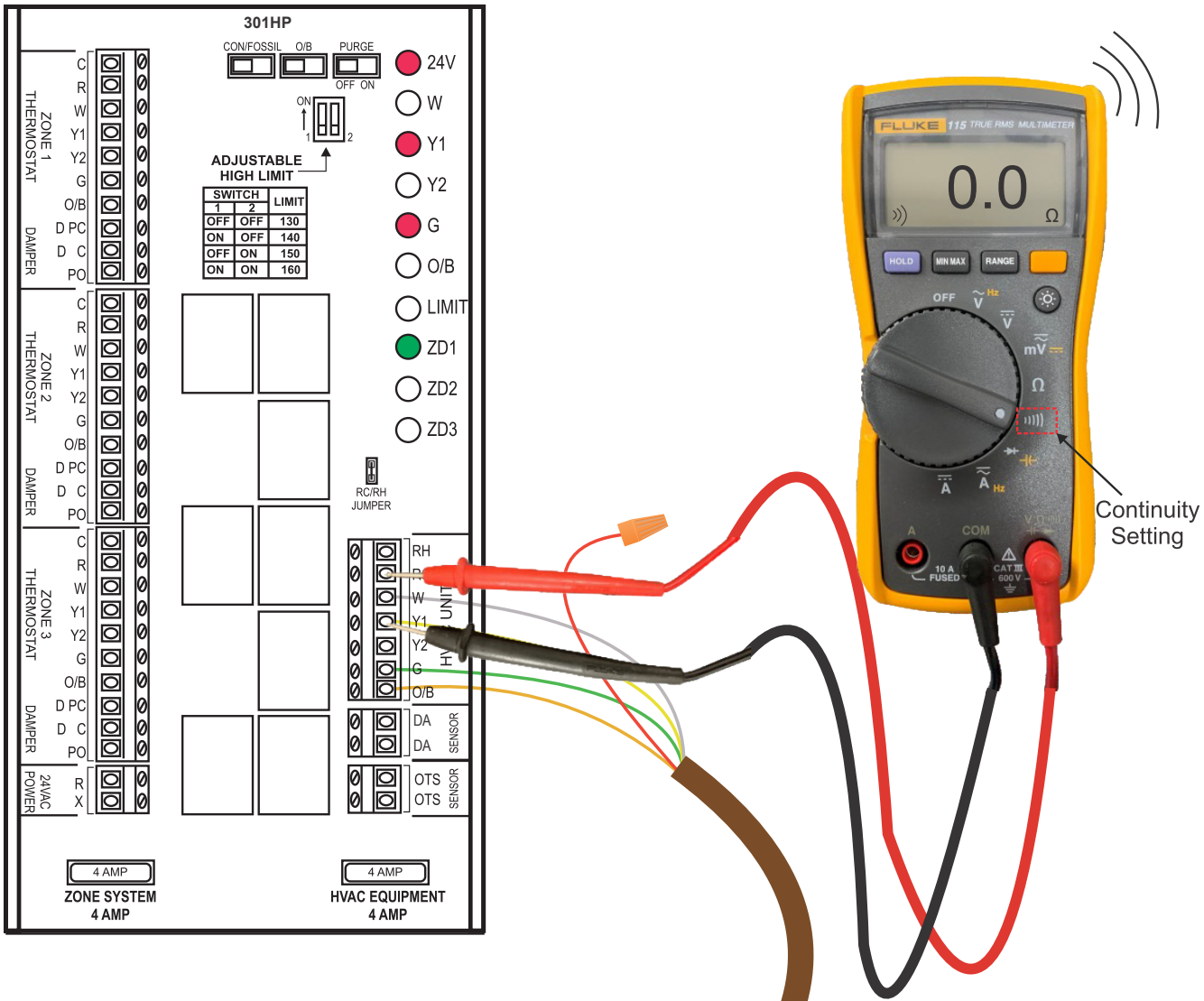
HVAC Unit Terminals

Note: THERE IS NO C (COMMON) WIRE FROM THE HVAC EQUIPMENT TO THE HVAC UNIT TERMINALS ON THE ZONE PANEL.

If the zone panel is not correctly outputting a signal to the HVAC equipment:

Confirm that the "HVAC Equipment" fuse has not been blown.

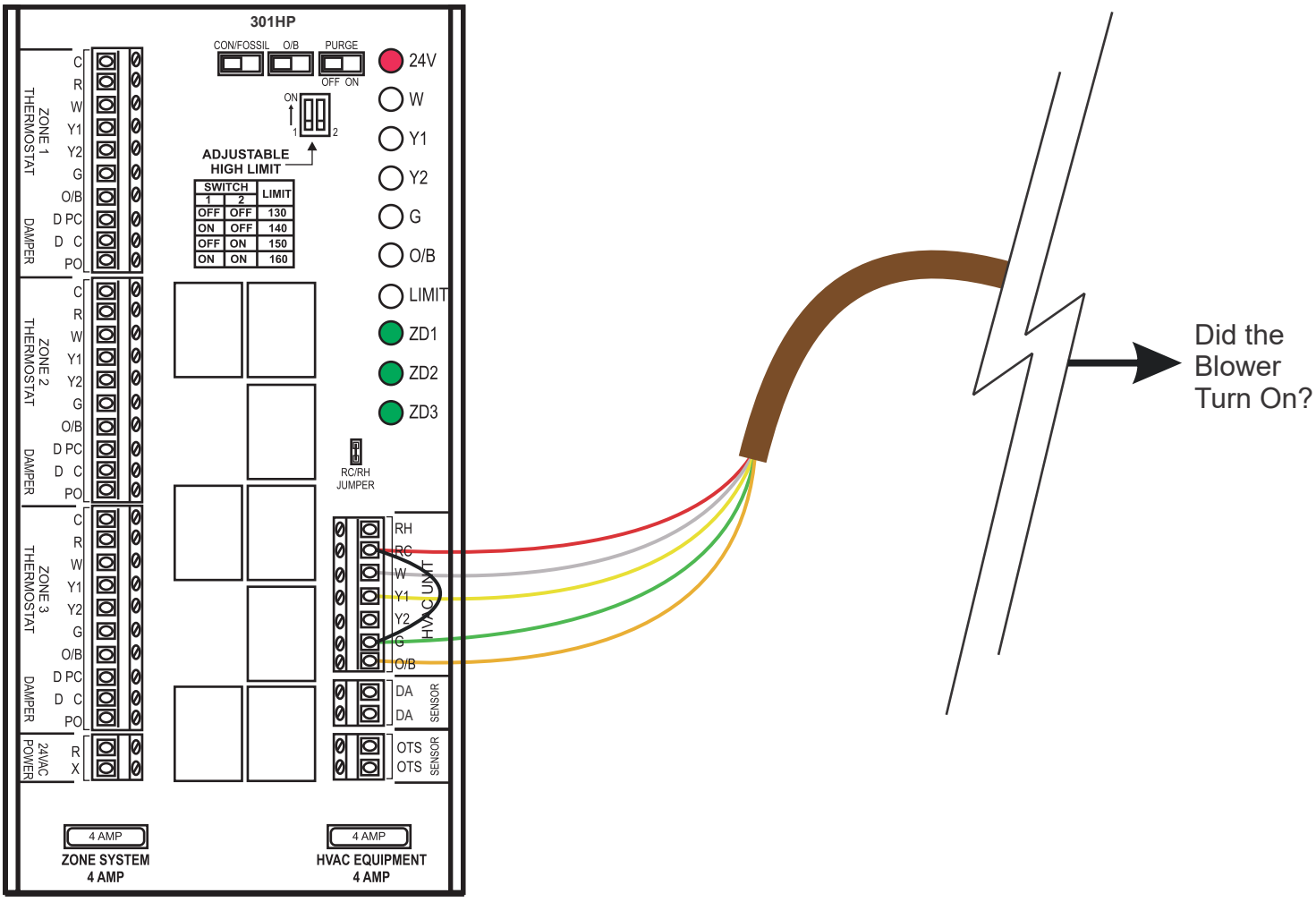
Remove the R (hot) wire from the HVAC equipment and take a **continuity** reading from RC (or RH) to each "HVAC Unit" terminal. A tone should be heard when testing the terminals whose corresponding LED is lit. If not, contact iO HVAC Controls for further tech support.



HVAC Unit Terminals cont.

If the continuity readings are correct, but the HVAC equipment is not turning on as expected:

- Double check the wiring between the HVAC equipment and the zone panel
- Remember, there is no C (common) wire between the HVAC equipment and the zone panel
- Place a jumper between R and the equipment signal in question, and see if the equipment turns on
- It is likely an issue with the HVAC equipment itself – contact the equipment manufacturer for further support

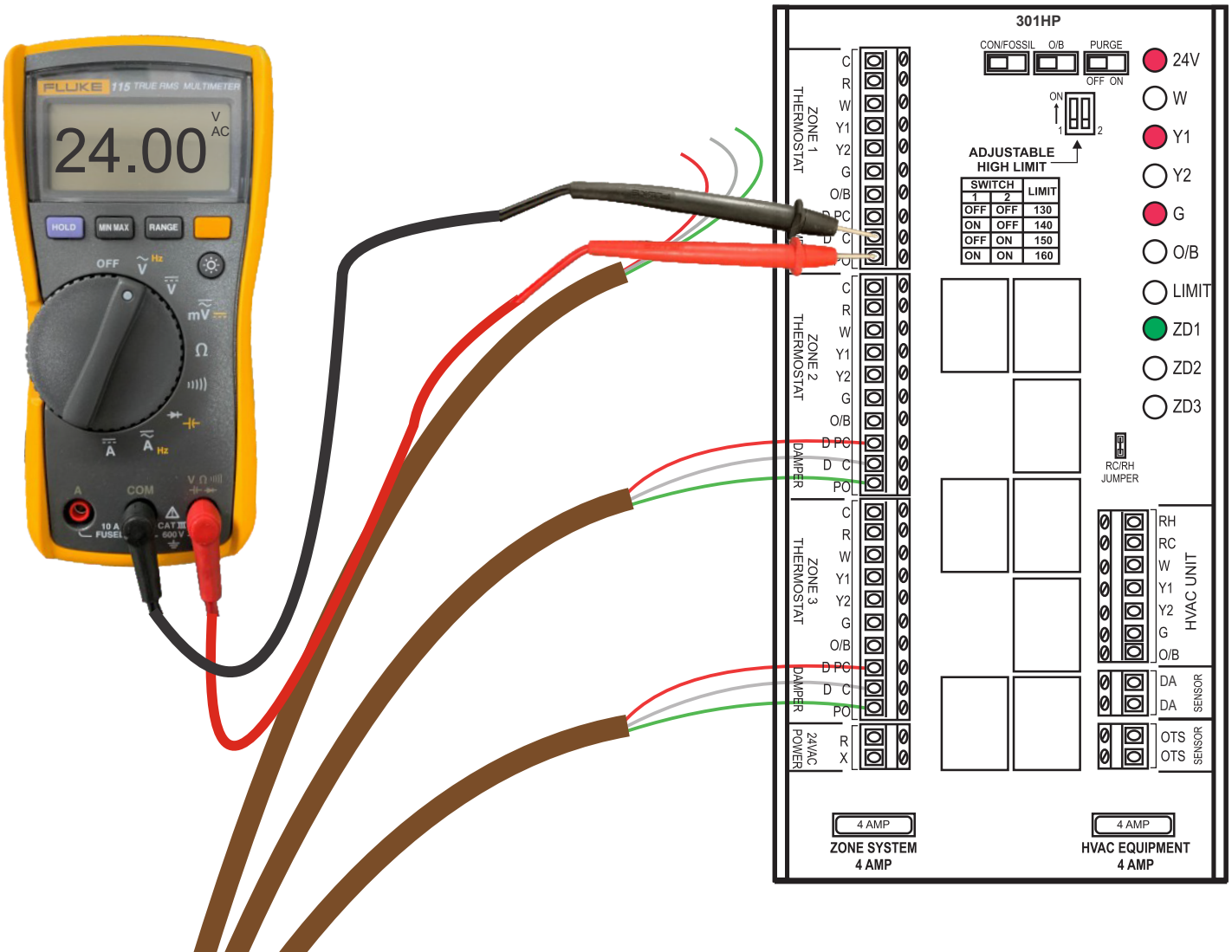


Damper Terminals

In order to test the damper outputs, the damper wires must be removed from the damper terminals on the zone panel.

If the zone panel is not telling a zone damper to open/close correctly:

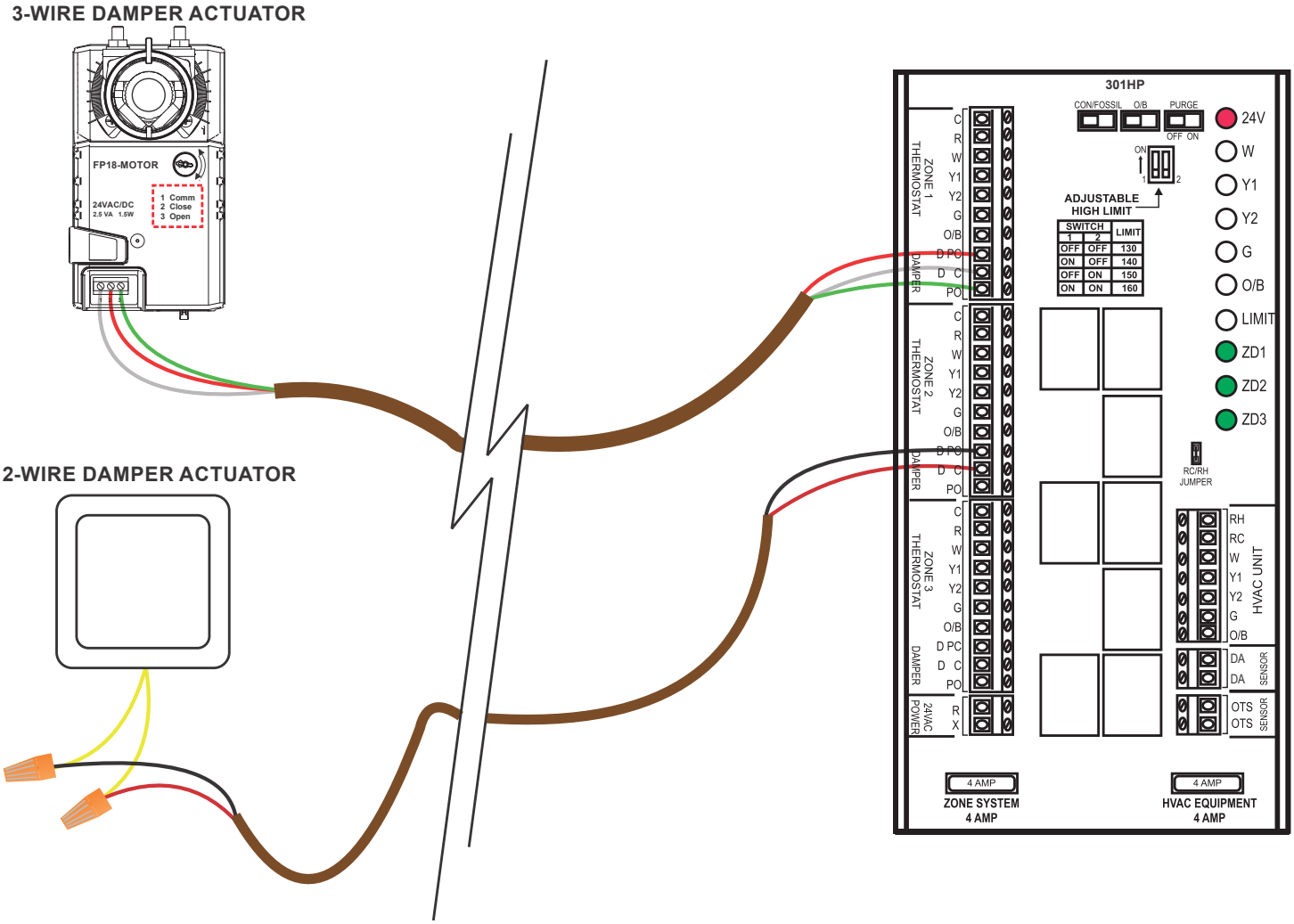
Using a multimeter, measure the voltage between C (common) and PC (power close) on the damper terminals. Then measure the voltage between C (common) and PO (power open). If the corresponding zone damper LED is lit, the reading should be 24Vac between C (common) and PO (power open). If the corresponding zone damper LED is NOT lit, the reading should be 24Vac between C (common) and PC (power close). If this is not the case, contact iO HVAC Controls for further tech support.



Damper Terminals cont.

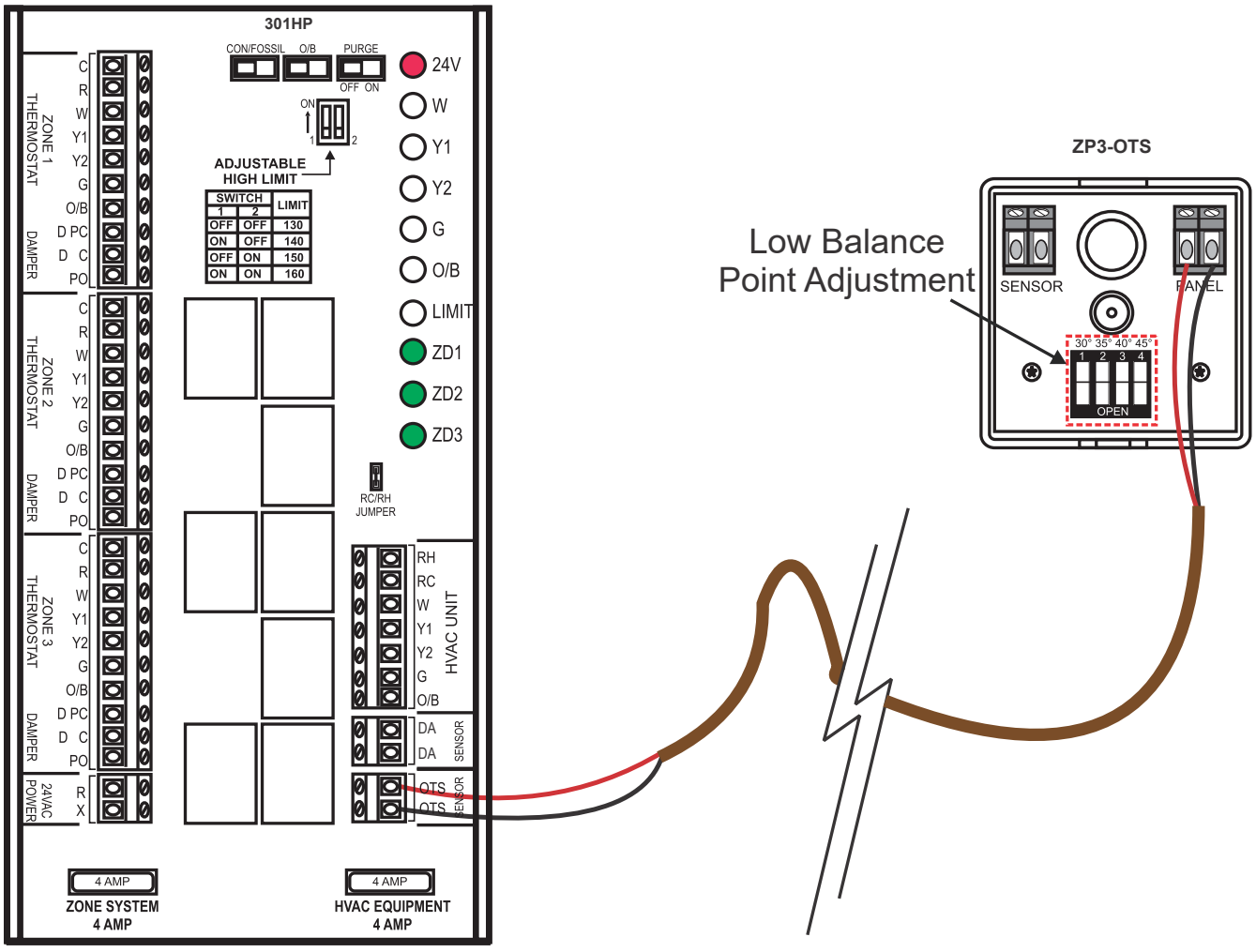
If the damper outputs are reading as expected, but the zone dampers are not opening or closing as expected:

- Double check the wiring between the zone dampers and the zone panel
- Apply power directly to the zone damper to see if it will open or close
- It is possible the zone damper is defective
- Examine the zone damper to determine if the damper actuator is defective or if there is a bind in the damper shell itself



Heat Pump/Balance Point Configuration

Note: Only applicable to the ZP3-HPS zoning panel

If using a ZP3-HPS, consider the following:

- Confirm ALL of the thermostats are configured for a conventional heat pump with electric backup heat
- Make sure the reversing valve is configured correctly on all the thermostats. O type energizes in cooling; B type energizes in heating
- Confirm the dip switches for heat pump configuration are correct on the ZP3-HPS zone panel
- If the ZP3-OTS is installed for balance point control, the low balance point may be tripped disallowing the compressor to turn on