

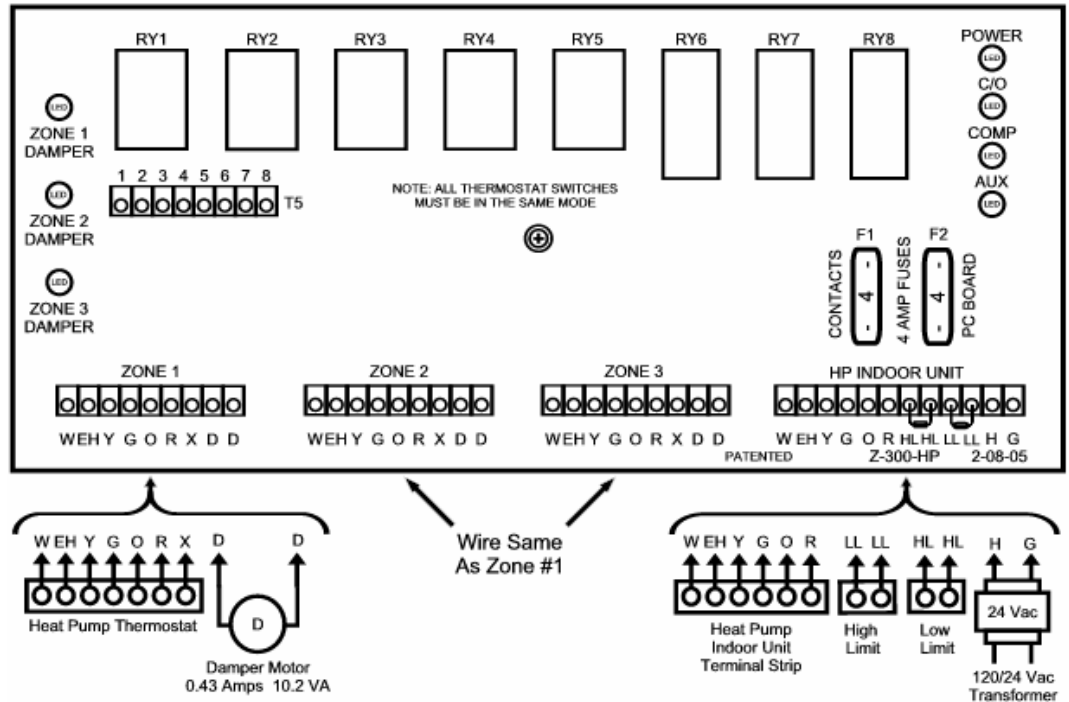
# Comfort System™

## Wiring Diagram For Z-300-HP Heat Pump Zone Control Panel Manual Changeover

When **green** zone LED's are on, those zones are calling for heating or cooling.

If the thermostat does not have an "EH" terminal, disregard "EH" on the zone panel.

**All thermostats must be set in the same mode.**



### Installation Notes:

To install the panel, first slide the PC board out of its base and screw the base to a flat surface next to the HVAC equipment. The PC board should be reinstalled by centering it over the base and pushing firmly.

### Connect only 24 Vac to Control Panel.

The zone control panel requires a separate 24 Volt transformer.

No special wire is required.

The thermostats and motorized dampers may be located up to 300 feet from the control panel when using 18 gauge thermostat wire.

Fuse F1 (4 Amp) protects the relay contacts. Fuse F2 (4 Amp) protects the printed circuit board.

### Zone dampers are powered closed / spring return open.

If the heat pump is not equipped with short cycle protection, a short cycle protection timer (TD-5) should be installed.

The low limit (FS-38) should be wired to the "LL" terminals on the control panel (remove jumper). The compressor will shut off when low limit trips out.

The high limit (HL-170-HP) should be wired to the "HL" terminals on the panel (remove jumper). The compressor, auxiliary heat and emergency heat will shut off when the high limit trips out.

A 40 VA transformer will power the control panel and up to four (4) dampers.

A 75 VA transformer will power the control panel and up to seven (7) dampers.

Up to three (3) dampers can be connected in parallel. A total of no more than seven (7) dampers may be connected to the system. A system may be a single panel or multiple panels.

If more than three zones are required, two additional control panels can be used to control up to a total of nine (9) zones. T5 terminal strip is used only when more than three zones are required.

Label the dampers, damper wires and thermostat wires with the zone number and the area they serve.

### Specifications:

Panel Dimensions:  
Height: 5.0 inches  
Width: 10.0 inches  
Depth: 2.0 inches

Mounting:  
2 back plate screws

Operating Ambient Temperature:  
-20° to 160° F

Power Supply:  
24 Vac 40VA / 75VA transformer

### Terminal Designations:

W = Auxiliary Heat  
EH = Emergency Heat  
Y = Compressor  
G = Fan  
O = Changeover Valve  
R = Hot 24 Volt  
X = Common  
D = Damper  
LL = Freeze Stat  
HL = High Limit  
H = Hot 24 Volt  
G = Ground or Common

05-13-05

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## Z-300-HP Heat Pump Zone Control Panel

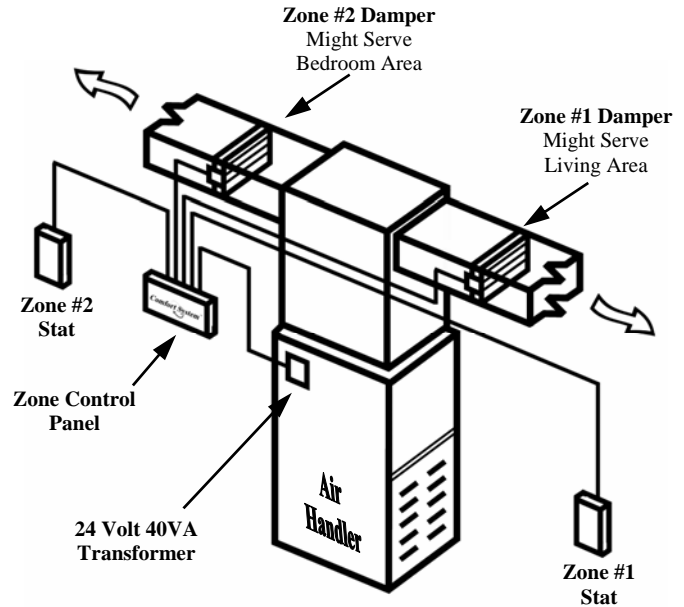
### Sequence Of Operation

Comfort System™ is a residential / light commercial zone control system that allows a single HVAC unit to have up to three separate zones (nine if three panels are connected together). Each zone is controlled by its own space thermostat and motorized zone damper. If any of the zone thermostats call for heating or cooling, the zones not calling will have their dampers powered closed, and the zone(s) calling will have its (their) damper(s) remain open. The heating or cooling equipment will also be brought on at the same time. When all zone thermostats are satisfied, the heating or cooling equipment turns off and all zone dampers return to the open position to allow for continuous air circulation. This is a manual changeover zone control panel.

### Thermostats

The Z-300-HP works with standard, heat pump thermostats. **All thermostats must be set in the same mode.** Thermostats must **not** be set in the auto changeover mode.

### Typical System



### System Checkout

Verify that all wires have been connected to the proper terminals and are secure.

Verify that the jumper across the “LL” and “HL” terminals were removed before connecting the high and low limit stats.

The low limit (FS-38) should be connected to the “LL” terminals on the zone control panel. The high limit (HL-170-HP) should be connected to the “HL” terminals on the zone control panel.

Zone dampers are powered closed and spring return open. There will be no power at the panel damper terminals marked “D” when the damper is in the open position.

When a green zone LED is on, that zone is calling for heating or cooling.

To check the system for proper operation, pull the disconnect for the condensing unit to prevent short cycling. Next, place all the zone thermostat mode switches in heat mode and turn down all thermostat set points. Go to each zone thermostat, one at a time, and call for heat to verify that the proper zone dampers are open (and the rest are closed). Turn the zone thermostat back down before checking the next zone.

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SYSTEMS

05-13-05

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