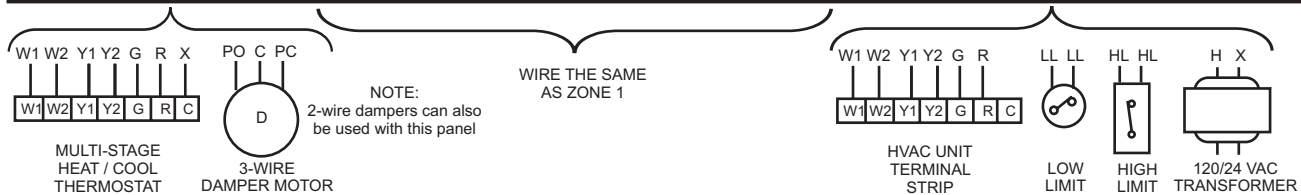
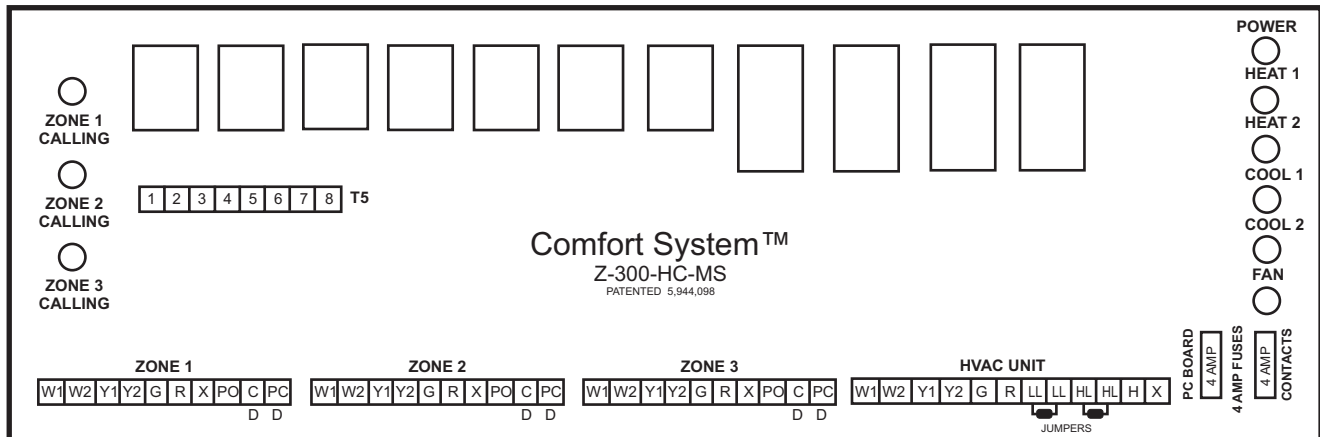


Comfort System™

Installation Instructions for Z-300-HC-MS Zone Control Panel Multi-Stage Heat / Cool Auto Changeover - Cooling Priority



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 control panel requires a separate 24 Volt transformer.

No special wire is required.

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

The right fuse (4 Amp) protects the relay contacts. The left fuse (4 Amp) protects the printed circuit board.

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

For split systems, the wires from the condensing unit should be connected to the appropriate terminals at the furnace.

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

The high limit (HL-170) should be wired to the 'HL' terminals on the panel (remove jumper). The furnace will shut off when high limit trips out.

For Powered Closed / Spring Return Open Dampers (2-wire):

a 40 VA transformer will power the panel and up to four (4) dampers. A 75 VA transformer will power the 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.

For Powered Closed / Powered Open Dampers (3-wire):

Panel and transformer capacities will vary depending on damper actuator used. If more than three (3) zones are required, two additional 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: 11.0 inches
Depth: 2.0 inches

Mounting:

2 back plate screws

Operating Ambient Temperature:
-20° to 160° F

Power Supply:

24 Vac 40VA / 75 VA transformer

Terminal Designations:

W1 =1st Stage Heat
W2 =2nd Stage Heat
Y1 =1st Stage Cool
Y2 =2nd Stage Cool
G =Fan
R =Hot 24 Volt
X =Common
PO =Powered Open
C (D) =Common (Damper)
PC (D) =Powered Closed
LL =Freeze Stat
HL =High Limit
H =Hot 24 Volt
X =Ground or Common

Comfort System™

Installation Instructions for Z-300-HC-MS Zone Control Panel Multi-Stage Heat / Cool Auto Changeover - Cooling Priority

Sequence of Operation:

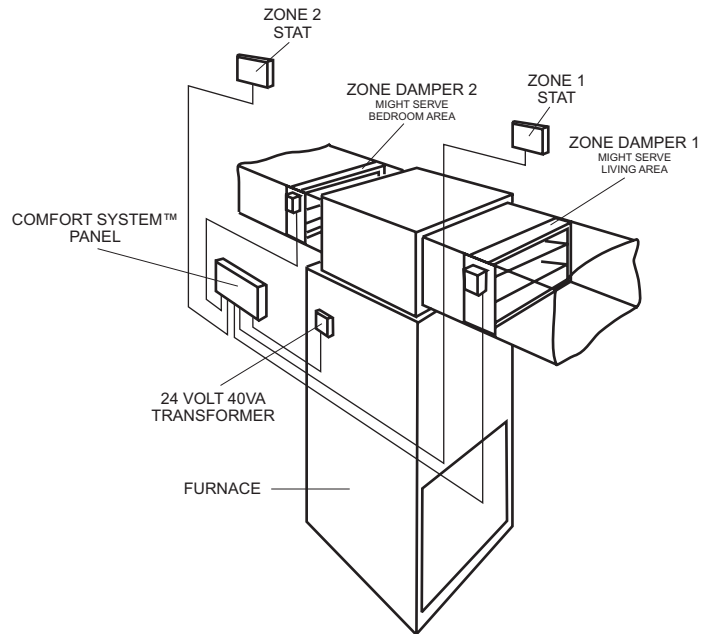
Comfort System™ is a residential / light commercial zone control system that allows a single HVAC unit to have up to three separate zones (nine if three panels are connected together). Each zone is controlled by its own space thermostat and motorized zone damper. If any of the zone thermostats call for 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.

If one of the zone thermostats is calling for heating and another zone thermostat is calling for cooling, the cooling thermostat will take priority and the system will operate in the cooling mode. When the thermostat that is calling for cooling is satisfied, the system will change over and take care of the heating requirement. This is referred to as Auto Changeover - Cooling Priority

Thermostats:

The zone control system works with standard, single-stage or multi-stage heat / cool thermostats. The thermostats can be either manual or auto changeover.

Typical System Layout



System Checkout

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

Verify that the jumpers across the 'LL' and 'HL' terminals were removed before connecting the high and low limits.

The low limit (FS-38) should be wired to the 'LL' terminals on the zone control panel. The high limit (HL-170) should be wired to the 'HL' terminals on the zone control panel.

Zone dampers can be either 3-wire (powered closed / powered open) or 2-wire (powered closed / spring return open).

- 3-wire dampers use PO, C and PC.
- 2-wire dampers use C and PC (D and D).

When a green zone LED is on, the 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.