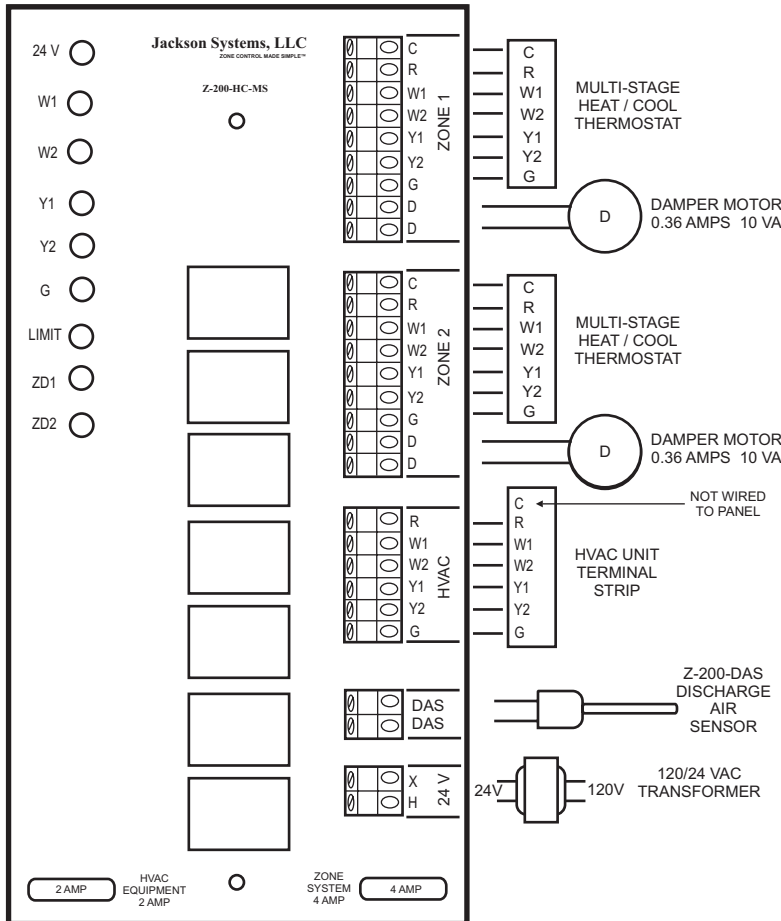


# THE GREEN ZONE™

Zone Control Made Simple™

## Z-200-HC-MS Installation and Operation Instructions

### 2 Heat / 2 Cool - Auto Changeover - First Call Priority



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 six (6) dampers. If more than three (3) dampers for an individual zone are required, a RY-1-HB relay should be used with an additional properly-sized transformer (10 VA per damper).

#### High and Low Limit Protection:

The Z-200-DAS Discharge Air Sensor should be mounted on the discharge air plenum of the HVAC unit and wired to the DAS terminals on the panel. The sensor will cycle off or downstage the equipment while maintaining fan operation if the temperature rises above 170° F or falls below 45° F. When the system goes out on low limit a 3 minute time delay is activated before cooling is allowed to energize providing the discharge air temperature has risen above 45° F. LIMIT LED Blinks when high or low limit is reached.

#### Sequence of Operation:

The Green Zone™ Z-200-HC-MS is a residential / light commercial zone control system that allows a single HVAC unit to have up to two separate zones. Each zone is controlled by its own space thermostat and motorized zone damper. If a zone thermostat calls for heating or cooling, the zone not calling will have its damper powered closed, and the zone calling will have its damper opened. The heating or cooling equipment will be brought on at the same time. When the calling zone is satisfied the heating or cooling equipment turns off. If one zone calls for heating and another zone calls for cooling, the first zone to call receives priority. When the first call is satisfied, the system will changeover and take care of the opposite call. If a zone being served (heating or cooling) has not been satisfied within 20 minutes and an opposite call takes place, the system will changeover. When the zone is satisfied or 20 minutes has gone by, the system will again changeover if an opposite call exists. . This is referred to as Auto Changeover - First Call Priority - Time Share. In the event of a tie, cooling will receive priority. Equipment staging is controlled by the zone thermostats.

#### Installation Notes:

To install the panel, first remove the cover by pulling straight out and slide the PC board from its base. Screw the base to a flat surface next to or on the HVAC unit. 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.

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

The 2 Amp fuse marked HVAC Equipment protects the relay contacts.

The 4 Amp fuse marked Zone System protects the printed circuit board.

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

#### Ventilation Mode:

Zone ventilation is established by the individual zone thermostat fan setting. Any thermostat set in the fan AUTO mode will not receive ventilation air when no equipment calls are taking place. Any thermostat set in the fan ON mode will receive ventilation air whenever there are no heating or cooling calls taking place.

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### Specifications:

#### Panel Dimensions:

Height: 8.0 Inches  
Width: 6.0 Inches  
Depth: 1.375 Inches

#### Mounting:

Snap Track with 2 back plate screws

#### Operating Temperature Rating:

-40° F to 150° F

#### Operating Humidity:

5% to 90% RH non-condensing

#### Wiring:

18-gauge wire for all equipment and system connections

#### Time Delays:

3 minutes minimum off between cooling calls  
3 minutes minimum off on low limit  
20 minute time share

#### Thermostats:

Multi-stage heat / cool thermostats  
Programmable or non-programmable  
Auto or manual changeover

### Terminal Designations:

#### Thermostats:

C	24Vac (Common)
R	24Vac (Hot)
W1	First Stage Heat
W2	Second Stage Heat
Y1	First Stage Cool
Y2	Second Stage Cool
G	Fan

#### Dampers:

D	Power Closed / Spring Open (2 wire)
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#### High / Low Limit

DAS	Discharge Air Sensor (2 wire)
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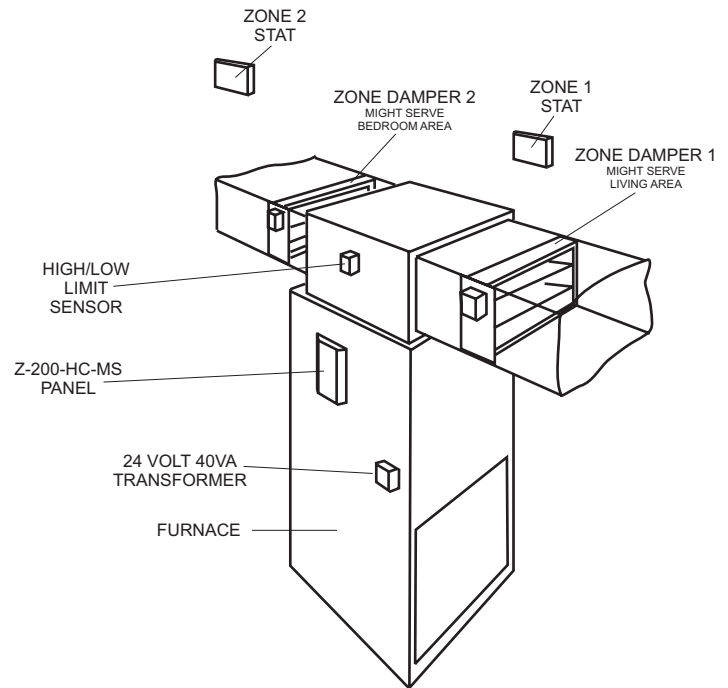
#### HVAC Equipment:

R	24Vac (Hot)
W1	First Stage Heat
W2	Second Stage Heat
Y1	First Stage Cool
Y2	Second Stage Cool
G	Fan

#### Panel Power:

X	24Vac (Common)
H	24Vac (Hot)

### Typical System Layout



### System Checkout:

1. Verify that all component wires have been connected to the proper terminals and are secure.
2. Disconnect the HVAC 'R' terminal wire at the panel and apply 24Vac to the panel.
3. Confirm that the LIMIT LED is ON.
4. Place both zone thermostats in the OFF position.
5. Put zone #1 thermostat in the heating mode and have the thermostat call for heat. Confirm that (ZD1) LED is ON and that (W) LED is ON. Confirm that zone #1 damper is open and zone #2 damper is closed. There will be no voltage on zone #1 'D' and 'D' terminals and 24Vac on zone #2 'D' and 'D' terminals.
6. Put zone #1 thermostat in the cooling mode and have the thermostat call for cooling. Confirm that (ZD1) LED is ON and that the (Y) and (G) LEDs are ON. Note: Cooling call may not activate immediately due to thermostat or panel cooling time delays.
7. Turn zone #1 thermostat off and repeat steps 5 and 6 with zone #2 thermostat. Remember, the zone calling will have its damper open and there will be no 24Vac on the 'D' and 'D' terminals for that zone.
8. Determine the ventilation mode of each zone thermostat by setting the thermostats in the Fan Auto or ON mode.
9. Reconnect the HVAC 'R' wire at the panel.