

Zones

See table below.

Compatible Equipment

All panels operate with gas/electric systems, conventional heat pumps and dual fuel heat pumps.

Equipment Selection

Selected using the jumper plugs on the panel. See table below.

Heating and Cooling Stages

See table below.

Compatible Thermostats

When gas/electric equipment is selected, heat/cool thermostats are used in all zones. When heat pump equipment is selected, a heat pump or heat/cool thermostat may be used in Zone 1 and heat/cool thermostats are used in all other zones.

Compatible Thermostat Types

Single stage, 24VAC powered or battery powered thermostats.

Compatible Dampers

The ProR80J-XX dampers with plug and play cables. Each damper is supplied with a 25-foot cable.

Dampers per Zone

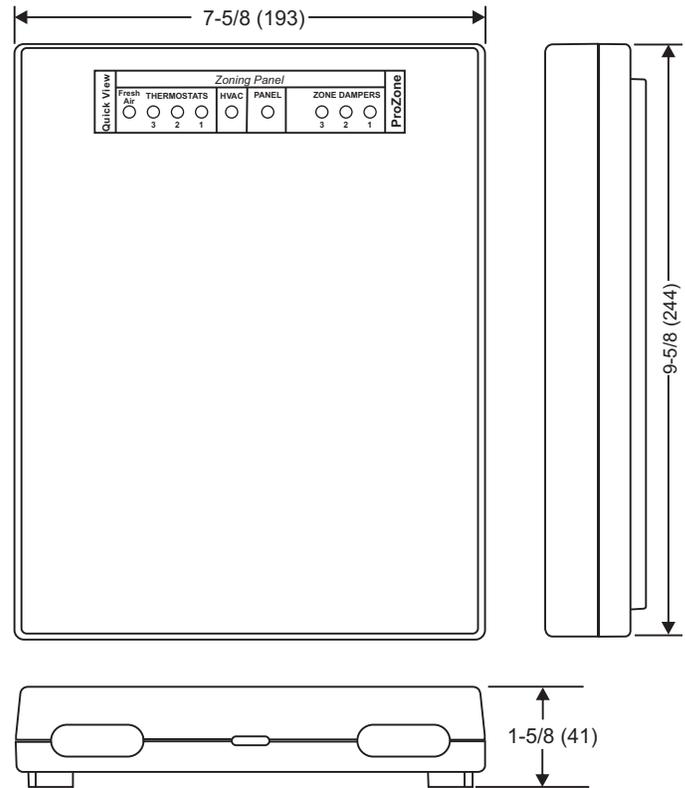
Multiple dampers may be used to configure a zone. The total number of dampers that can be used depends on the VA rating of the 24VAC transformer used. Up to six dampers can be daisy chained to configure a zone.

Bypass Control

The panel can be used with traditional mechanical barometric dampers, adjusting the close position limit on each zone damper or use the non-calling zone dampers for bypass.

Optional Sensors

Discharge air (Model TS2) and outdoor air temperature sensor (Model TS3) can be used. A pressure sensor (Model PS2) can be used to monitor duct pressure.



Panel Power

24VAC (18 to 30), 10VA

Wiring

Use 18 or 20 AWG solid thermostat wire.

Humidity Rating

5 to 90% RH non-condensing.

Temperature Ratings

| | |
|-----------|------------------------------|
| Shipping | -20° to 150°F (-29° to 66°C) |
| Operating | 0° to 165°F (-32° to 74°C) |

| | Model ProR221J | Model ProR212J | Model ProR321J | Model ProR312J |
|--------------------------|----------------|----------------|----------------|----------------|
| Zones on Panel | Two | Two | Three | Three |
| Expandable | No | No | No. | No. |
| Gas/Electric Equipment | | | | |
| Heating Stages | Two | One | Two | One |
| Cooling Stages | One | Two | One | Two |
| Heat Pump Equipment | | | | |
| Compressor Stages | One | Two | One | Two |
| Auxiliary Heating Stages | One | None | One | None |

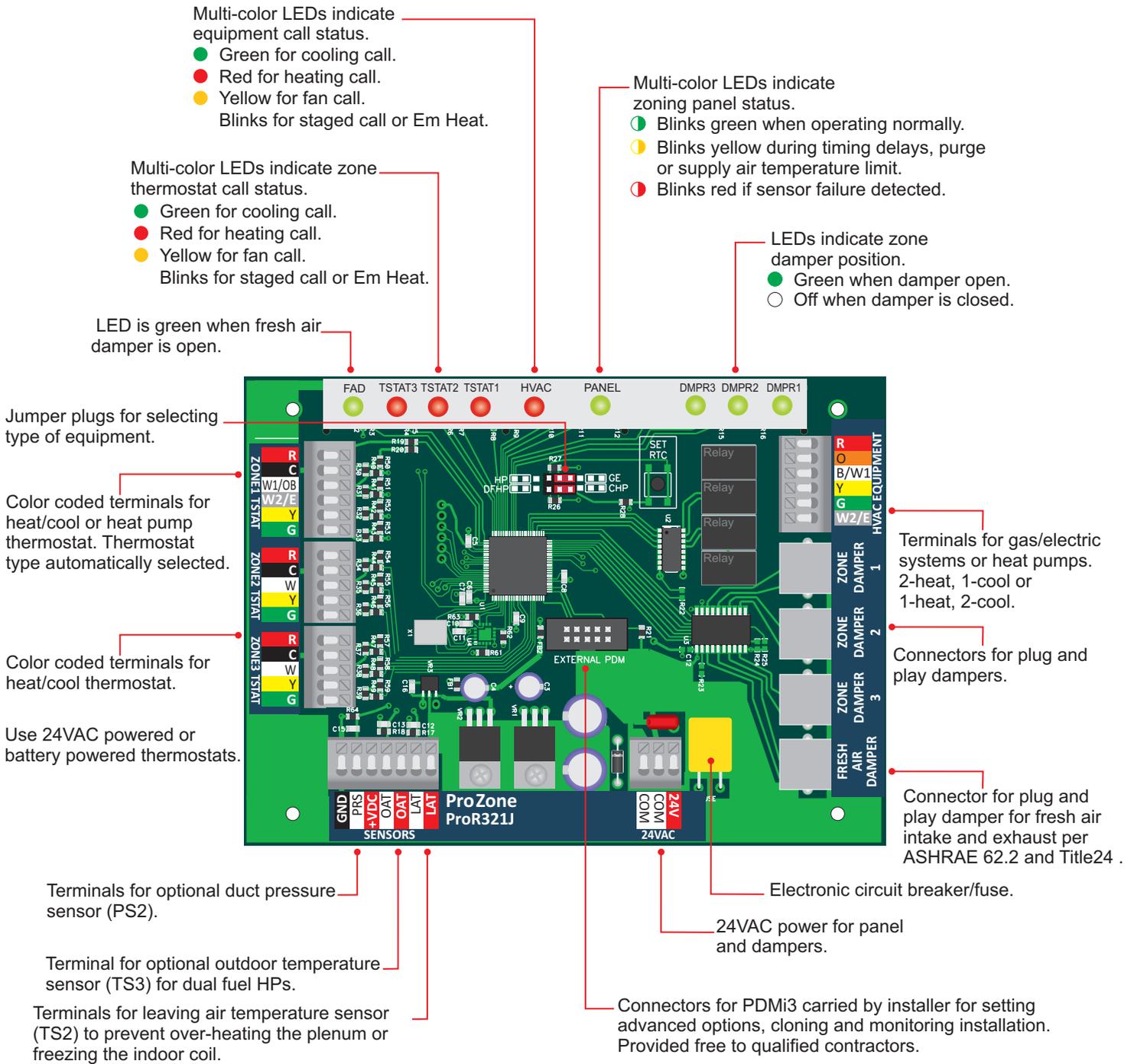
Warranty

5-year warranty limited to repair or replacement of panel due to defective material or workmanship.

Features

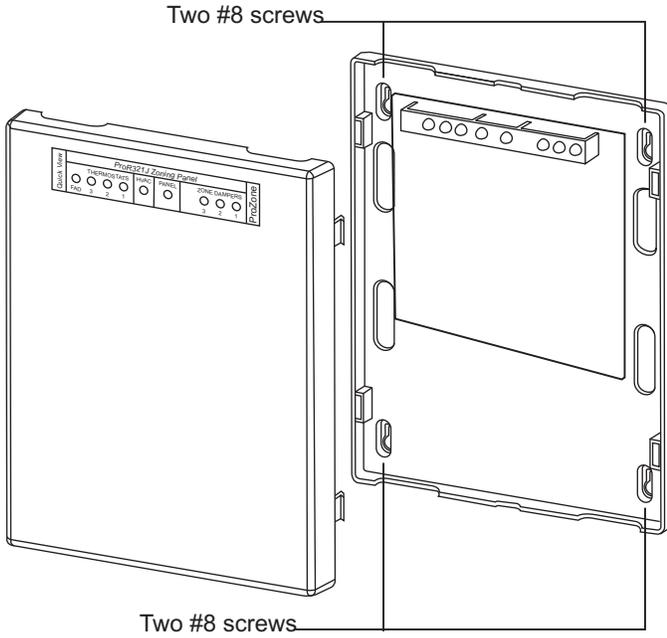
ProR Series Zoning Panels

Model ProR321J Shown



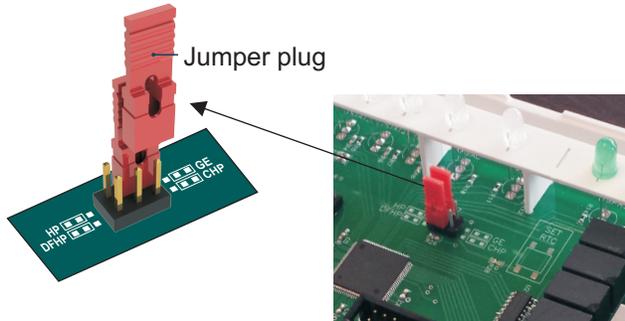
1. Mounting Panel

Remove the top cover and attach the panel to a wall close to the unit using four #8 screws.



2. Selecting Equipment

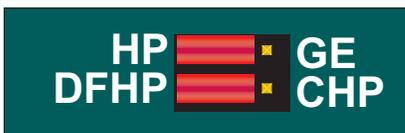
Jumper plugs are used to select the equipment type. The panel is shipped with the jumper plugs in the Gas/Electric position. To change equipment type, remove the jumper plug(s) and place in the correct position as shown below. Use the PDMi3 to change zone sizes, bypass options, fresh air control, staging and much more.



Gas/Electric selected.



Conventional Heat Pump selected.



Dual Fuel Heat Pump selected.

3. Selecting Transformer

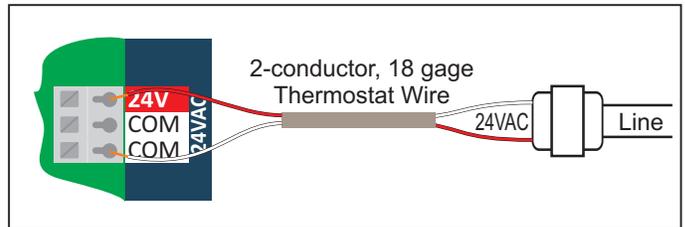
The VA rating of the transformer depends on the number of actuators being used. The table below shows the VA required for each zoning component including the ProR80J dampers.

| | Maximum VA | Typical VA |
|-----------------|------------|------------|
| Panel | 10VA | 10VA |
| Zone Thermostat | 1.8VA | 1.0VA |
| Zone Damper | 2.4VA | 1.0VA |

The table below shows the number of dampers that can be used with a 3 -zone installation using a 40, 60 or 75VA transformer and ProR80J dampers.

| | 40VA Transformer | 60VA Transformer | 75VA Transformer |
|--------|------------------|------------------|------------------|
| 3-Zone | 11 Dampers | 19 Dampers | 26 Dampers |

Install the 24VAC transformer according to local electrical codes and connect the 24VAC output to the terminals on the panel using 2-conductor, 18 gage, thermostat wire as shown below.



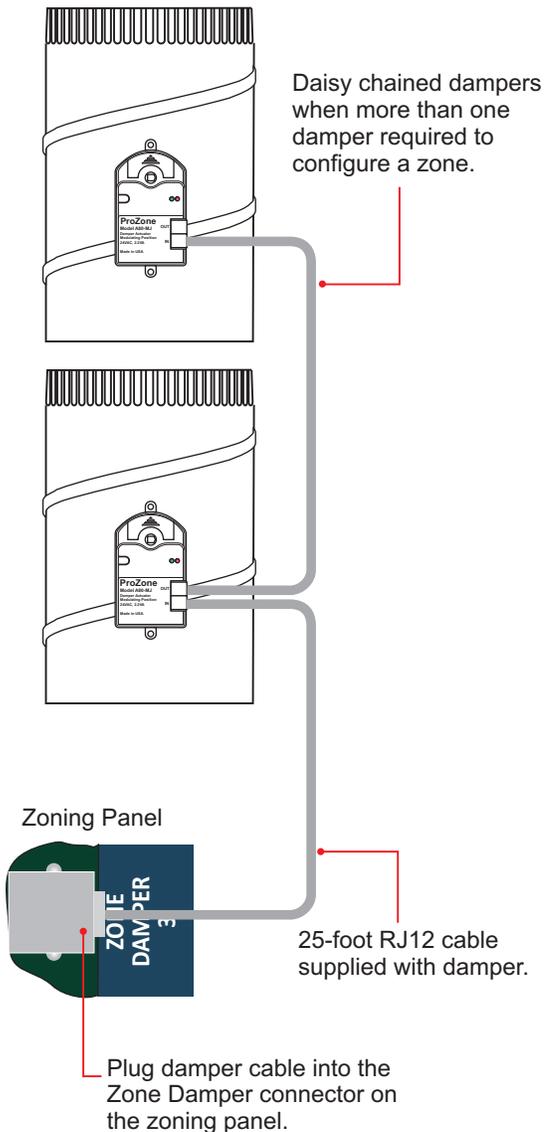
4. Installing Dampers

One or more dampers can be used to define a zone. Dampers should be installed in the duct or ducts and sealed to insure no air leakage. Shown below is the ProR80J-XX damper.



5. Wiring Dampers

The dampers are connected to the zoning panel with the cables provided with each damper.

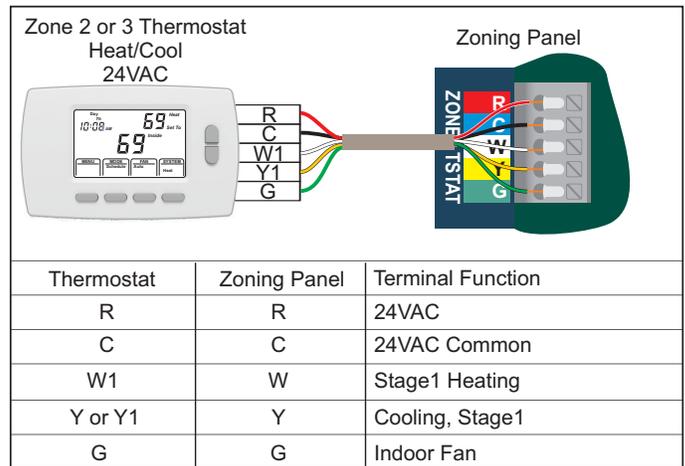
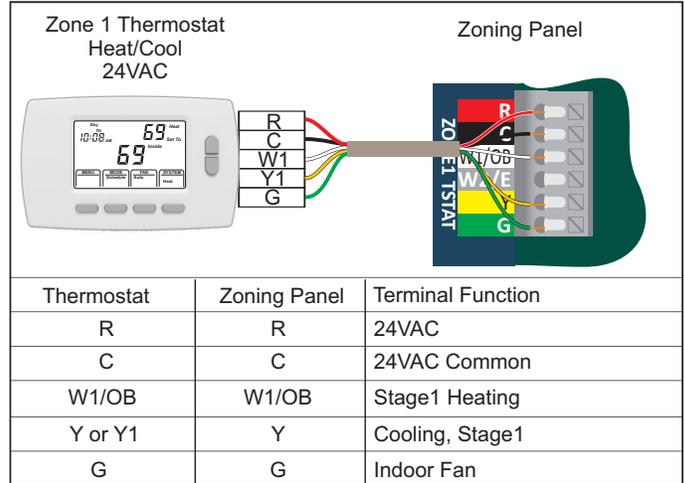


6. Wiring Zone Thermostats

Heat/Cool thermostats can be used in all zones. A heat pump thermostat can be used in Zone1 with heat pump equipment to control emergency heating. The type of thermostat can be selected using the PDMi3.

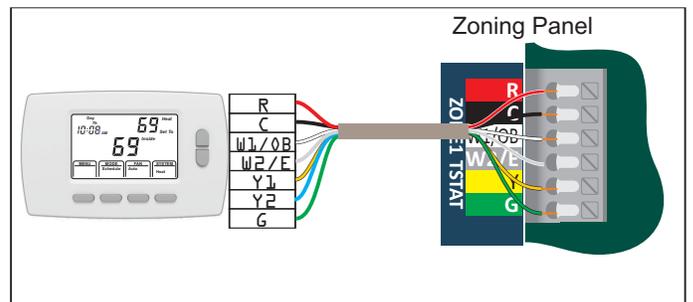
Heat/Cool Thermostats

Gas/electric systems using Heat/Cool thermostats. Wiring for these thermostats is shown below.



Heat Pump Thermostats with Auxiliary Heating

A heat pump thermostat should be used in Zone1 when heat pump equipment is selected. Wiring of a heat pump zone thermostat is shown below.



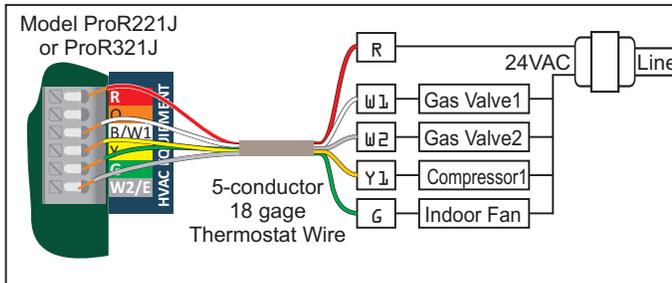
| Thermostat | Zoning Panel | Terminal Function |
|------------|--------------|-------------------------------------|
| R | R | 24VAC |
| C | C | 24VAC Common |
| OB | W1/OB | Reversing valve. |
| W2/E | W2/E | Auxiliary Heating/Emergency Heating |
| Y1 | Y | Stage1 Compressor |
| G | G | Indoor Fan |

When using a heat pump thermostat, on the thermostat select O operation of the reversing valve. If both an O and B terminal is provided on the thermostat, wire the thermostat O terminal to the W1/OB terminal at the Zone1 thermostat terminals.

7. Wiring HVAC Equipment

Gas/Electric System, Two-Stage Heat

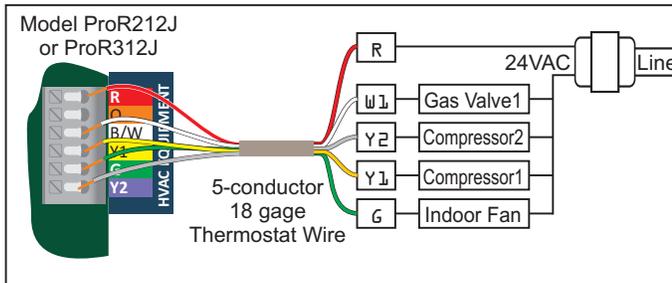
Gas/Electric systems using a single 24VAC transformer are wired as shown below.



| Zoning Panel | Equipment | Terminal Function |
|--------------|-----------|------------------------------------|
| R | R | 24VAC for Thermostat and Terminals |
| B/W1 | W1 | Gas Valve, Stage 1 |
| W2/E | W2 | Gas Valve, Stage 2 |
| Y | Y1 | Compressor Stage 1 |
| G | G | Indoor Fan |

Gas/Electric System, Two-Stage Cool

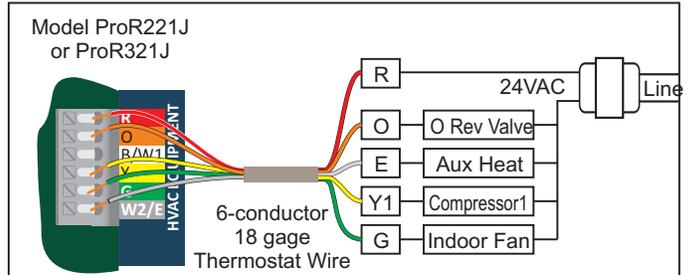
Gas/Electric systems using a single 24VAC transformer are wired as shown below.



| Zoning Panel | Equipment | Terminal Function |
|--------------|-----------|------------------------------------|
| R | R | 24VAC for Thermostat and Terminals |
| B/W | W1 | Gas Valve, Stage 1 |
| Y1 | Y1 | Compressor Stage 1 |
| Y2 | Y2 | Compressor Stage 2 |
| G | G | Indoor Fan |

Heat Pump System with Auxiliary Heat

Conventional and dual fuel heat pumps are wired the same as shown below. The Auxiliary heat or Emergency heat on a conventional heat pump is an electric strip heater and a gas furnace on a dual fuel heat pump and connected to the W2/E terminal on the panel.



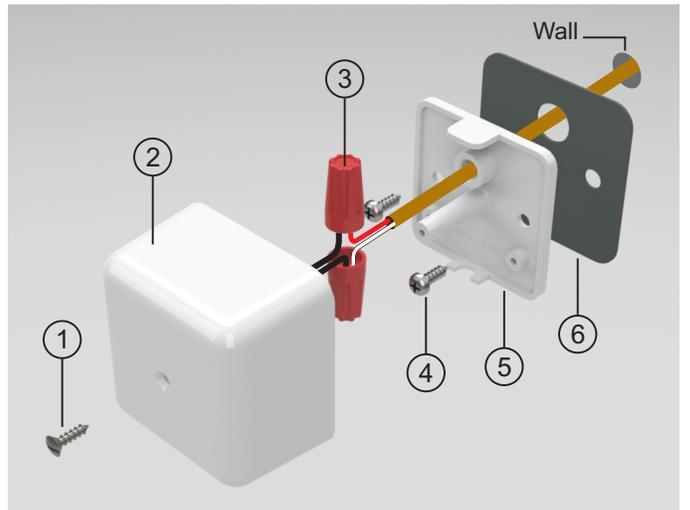
| Zoning Panel | Equipment | Terminal Function |
|--------------|-----------|------------------------|
| R | R | 24VAC |
| O | O | O-type Reversing Valve |
| W2/E | W1 or E | Auxiliary Heating |
| Y | Y1 | Compressor Stage 1 |
| G | G | Indoor Fan |

8. Optional Sensors

Outdoor Temperature Sensor (Model TS3)

The outdoor temperature sensor (TS3) is required for dual fuel heat pumps. The panel automatically switches to fossil fuel heating when the outdoor temperature drops below the preset 40°F. The temperature limit can be changed using the PDMi3 carried by the installer.

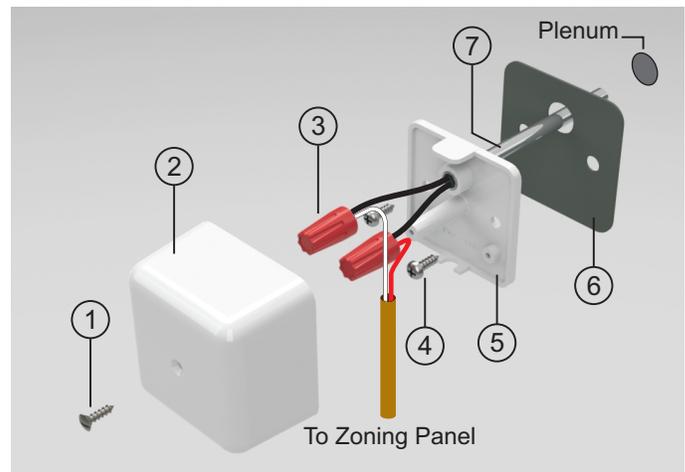
The outdoor temperature can also be used to limit staging in moderate weather. This option can be turned on using the PDMi3 carried by the installer.



Installing the Outdoor Temperature Sensor

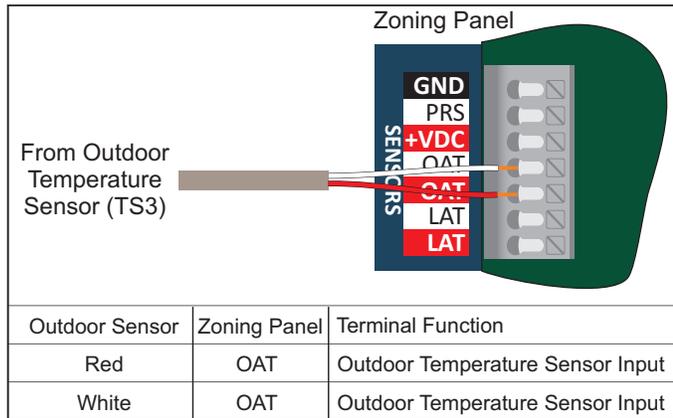
The outdoor temperature sensor (TS3) should be placed in a shaded location and protected from rain or snow such as under the eaves of a home. Select a location and drill a 5/16-inch diameter hole to pass the sensor wires through.

Remove screw (1) and separate the base (5) and the cover (2). Pass a 2-wire thermostat cable through the wall, through the gasket (6) and through the base (5). Secure the base (5) to the wall with the gasket (6) between the base and wall using the two mounting screws (4). Connect the red and white thermostat wires to the thermistor wires (no polarity) using the wirenuts (3). Push the wirenuts and wire into the cover and secure the cover with the screw (1).



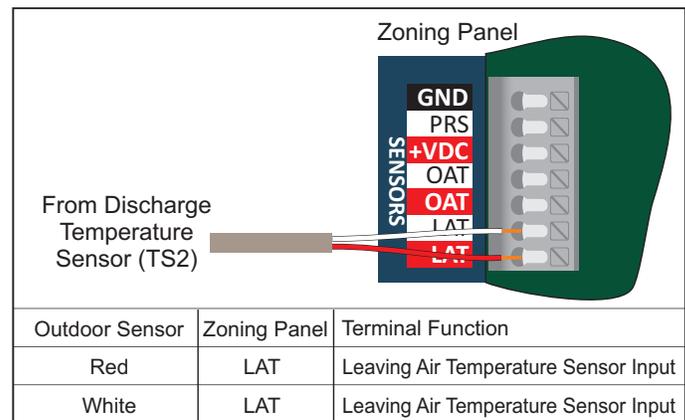
Wiring the Outdoor Temperature Sensor

Connect the red and white thermostat wires to the OAS Sensor (TS3) terminals as shown below.



Wiring the Discharge Air Temperature Sensor

Connect the red and white thermostat wires to the LAT Sensor (TS2) terminals as shown below.



Discharge Air Temperature Sensor (Model TS2)

The optional discharge or leaving air temperature sensor (TS2) can be used to limit discharge air temperature in heating and cooling to prevent over-heating the plenum or freezing the indoor coil when only a small number of zones are calling.

The panel is factory set for 160°F heating limit for gas heating and 140°F for compressor heating. If the discharge temperature exceeds these limits, the panel will down-stage or turn the heating off (fan continues to operate) until the temperature is within limits. In cooling the factory limit is set to 45°F. The PDMi3 can be used to digitally adjust these limits.

Installing the Discharge Air Temperature Sensor

The discharge temperature sensor (TS2) has a 6-inch long, stainless steel tube that goes into the discharge airstream in the plenum or main supply duct.

Warning!

Be careful when drilling holes in the plenum to avoid puncturing the indoor coil or damaging other components.

Drill a 3/8-inch diameter hole in the plenum or supply duct. Remove the screw (1) to separate the cover (2) and base (5). Insert the sensor tube (7) through the gasket and the drilled hole. Attach the base to the plenum or duct using the two mounting screws (4). Use the wire nuts (3) to connect the red and white thermostat wires to the two thermistor wires. Place the wires into the cover and through the U-shaped tab at the bottom of the base. Install the cover using the screw (1).

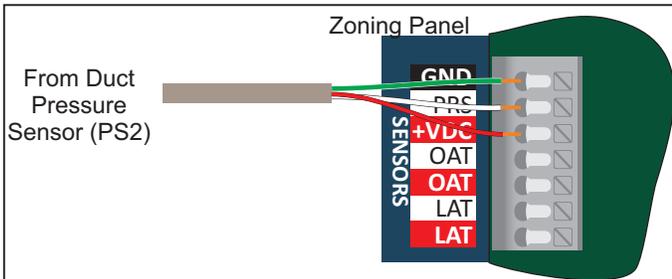
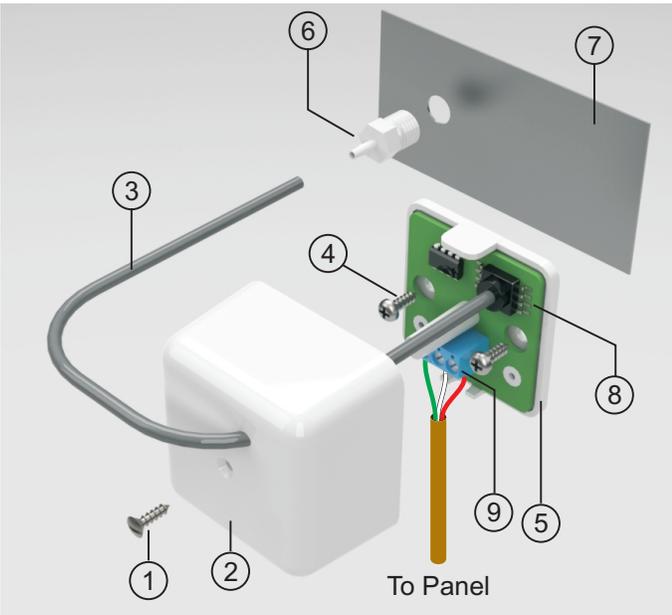
Duct Pressure Sensor (Model PS2)

The Duct Pressure sensor (PS2) is installed in the main supply duct, at least 3 feet before the first split and is connected to the panel.

Installing the Duct Pressure Sensor

Drill a 3/8-inch diameter hole in the supply duct (7) and thread the pressure pickup (6) into the hole. Use a small amount of sealant if required. Attach the pressure tube (3) to the pressure pickup (6).

Remove the screw (1) and slide the cover (2) up the pressure tube (3). Use the two screws (4) to attach the pressure sensor base (5) to the duct (7). Using 3-conductor thermostat wire, connect the red, white and green thermostat wires to the terminals. Slide the cover over the base and secure the screw.



| Pressure Sensor | Zoning Panel | Terminal Function |
|-----------------|--------------|-----------------------|
| +5V | Red, +VDC | +5 VDC Sensor Power |
| PRS | White, PRS | Pressure Sensor Input |
| GND | Black, GND | Ground |

9. Ready to Power-Up and Operate

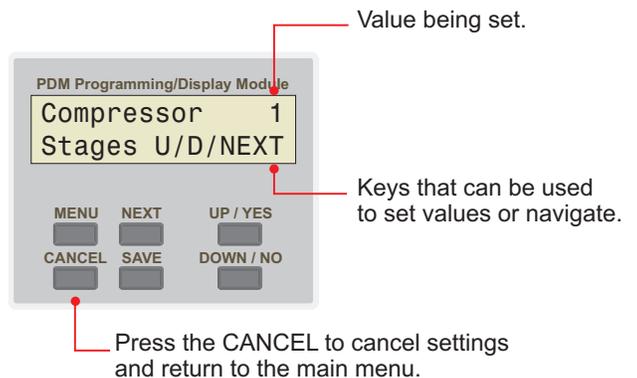
The panel is ready to operate and control the equipment selected. The PDMi3 can be used to change factory settings, customize the panel, clone it from a previously saved configuration, change option settings, monitor performance and test the installation.

The PDMi3 is shown below plugged into a panel. The PDMi3 is supplied at no cost to qualified contractors.



Using the PDMi3

The PDMi3 plugs into the panel and reads all the panel settings and the allowable settings for the options. Pressing the MENU key for 4 seconds accesses the Installer menu. Pressing and releasing the MENU key accesses the User menu where settings and data can be viewed but not changed.



Options and Factory Settings, All Zoning Panels

| Option | Selections | Factory Settings |
|-------------------------|---|---------------------|
| Equipment | Gas/Electric, conventional or dual fuel heat pumps. | Gas/Electric |
| Indoor Fan Mode | Gas or electric. | Gas |
| High DAT Limit | 110 to 180°F | 160°F |
| Low DAT Limit | 37 to 55°F | 45°F |
| Em Heat Control | Zone1. | Zone1 |
| Dampers Used | ProR80J-XX | ProR80J-XX |
| Bypass | External Barometric or adjusting damper close position. . | External Barometric |
| Zone Sizes | Equal or different. | Equal |
| Opposite System Service | On or Off | Off |
| Opposite System Time | 5 to 240 minutes. | 20 minutes |
| Purge After Call | On or Off. | Off |
| Purge Time | 30 to 240 seconds. | 60 seconds |
| Staging Calculations | Weighted Zones calling. | Weighted Zones |
| Timed Upstaging | On or Off. | On |
| Moderate Weather Limit | On or Off | Off |
| Moderate Weather Temp | 40 to 60°F. Requires outdoor temperature sensor. | 55°F |
| Priority System | Heating or cooling. | Heating |
| Minimum Run Time | 0 to 10 minutes. | 2 minutes |
| Minimum Off Time | 0 to 10 minutes. | 2 minutes |
| Fresh Air Control | On or Off. | Off |

Installer Menu

Press and hold the MENU key for 4 seconds to access the Installer menu. The PDMi3 displays "Waiting for Data" while it reads the panel settings. The MAIN menus are shown below.

Select Equipment By Clone Y/N

Press Yes to use a previously saved configuration to clone this panel to the same settings. Press No to continue.

Change Equipment Options Y/N

Press Yes to set the number of stages of heating and cooling, the fan operation, the supply air temperature limits, outdoor changeover temperature for dual fuel heat pumps and number of zones being used. Press No to continue.

See page 9 for more information.

Change Tstat Options Y/N

Press Yes to change the type of thermostats used. When heat pump equipment is selected, the Zone1 thermostat may be a heat/cool or heat pump type and the reversing valve operation (O or B) can be selected.

See page 10 for more information.

Change Zone Size Y/N

Press Yes to change the size of each zone. The zone size is set in a weighted value from 0.5 to 2.0. A small zone might be 0.5 and a large zone might be 1.5 zones. Be sure the total is equal to the total number of zones. Press No to continue.

See page 10 for more information.

Change Bypass Options Y/N

Press Yes to change the bypass options. Bypass can be achieved using the non-calling zone dampers, using the Close stop position or a bypass duct between the supply and return controlled by a barometric damper. Press No for other menu selections.

See page 10 for more information.

Change Staging Options Y/N

Press Yes to change the staging using the weighted zones calling and the timer. Each stage can be set to turn on at the same or different weighted zones calling at the time. Or a stage can be delayed and set to turn on after the call has been active for a number of minutes.

The delayed option can be used to meet the new Title24 requirement to delay auxiliary strip heating in a conventional heat pump.

Timers can be set to override capacity staging and activate each stage after the call time has reached a number of minutes. Press No to continue.

See page 11 for more information.

Change Fresh Air Options Y/N

Press Yes to select fresh air control. Press No to continue.

Fresh Air Off Y-On/N-Off

Press Yes to select fresh air control to meet the new requirements of Title24 and ASHRAE 62.2 without the use of a dedicated fresh air controller. Press No to continue.

The PDMi3 can be used to calculate the minimum CFM of fresh air and the number of minutes of fresh air intake per hour. Or the minutes of fresh air each hour can be entered.

The outdoor temperature can also be used to limit fresh air operation if the outdoor temperature exceeds the high or low limit set.

See page 12 for more information.

Change Advanced Options Y/N

Press Yes to select advanced options such as purge, opposite system service, heat or cooling priority, automatic emergency heat control, moderate weather staging inhibit, fresh air control and others. Press No to continue.

See page 13 for more information.

Display Data And Selections Y/N

Press Yes to display all the option settings, sensor data, call status, error messages and much more. Press No to continue.

Monitor HVAC Performance Y/N

Press Yes to display the leaving air temperature, duct pressure and the position of the non-calling zone dampers when used for bypass. The data is automatically updated every 5 seconds. Press No to continue.

Restore Defaults Y/N

Press Yes to restore the panel to the factory settings. Press No to continue.

Save Options Now Y/N

Press Yes to save the options and settings selected. Press No to return to the main menu.

Save Selections As Clone Y/N

Press Yes to save the options and settings as a Clone. The Clone can be identified with a 16-character name for future use. Press No to return to the main menu.

Setting Equipment Options

Access the Installer menu and select the menu below. Press Y to set equipment options. The options will be different based on the type of equipment selected. Selecting the correct stages is important for proper staging control.

Select Equipment Options Y/N

The equipment type is set by the jumper plugs and cannot be changed with PDMi3. Press Yes to continue to select additional options.

Equipment Type GasElec Y/N

Press Yes to select gas/electric equipment. If equipment type is incorrect, press Cancel and see Selecting Equipment on page 3.

Compressor Stages 1 U/D/NEXT

Press Up or Down to change the number of stages. Press NEXT to continue.

Heating Stages 1 U/D/NEXT

Press Up or Down to change the number of stages. Press NEXT to continue.

Fan Mode Gas N/NEXT

Press No to display the options— Gas or Elec. Press Yes to select either Gas or Electric.

Htg Temp Lmt 160 U/D/NEXT

Press Up or Down to change the heating temperature limit. Press NEXT to continue.

Clg Temp Lmt 45 U/D/NEXT

Press Up or Down to change the cooling temperature limit. Press NEXT to continue.

When the leaving air temperature exceeds the limits, the equipment will down stage and, if necessary, turn the heating or cooling source off while operating the fan.

Total Zones Used 3 U/D/NEXT

Press Up or Down to change the number of zones being used. Press NEXT to continue.

Equipment Type ConvHP Y/N

Press Yes to select conventional heat pump. If equipment type is incorrect, press Cancel and see Selecting Equipment on page 3.

Compressor Stages 1 U/D/NEXT

Press Up or Down to change the number of stages. Press NEXT to continue.

Aux Heating Stages 1 U/D/NEXT

Press Up or Down to change the number of auxiliary heating stages. Press NEXT to continue.

Htg Temp Lmt 160 U/D/NEXT

Press Up or Down to change the heating temperature limit. Press NEXT to continue.

Clg Temp Lmt 45 U/D/NEXT

Press Up or Down to change the cooling temperature limit. Press NEXT to continue.

Total Zones Used 3 U/D/NEXT

Press Up or Down to change the number of zones being used. Press NEXT to continue.

Equipment Type
DFHP Y/N

Press Yes to select dual fuel heat pump. If equipment type is incorrect, press Cancel and see Selecting Equipment on page 3.

Compressor Stages 1
U/D/NEXT

Press Up or Down to change the number of stages. Press NEXT to continue.

Aux Heating Stages 1
U/D/NEXT

Press Up or Down to change the number of auxiliary heating stages. Press NEXT to continue.

Fossil Fuel OBP 35
U/D/NEXT

Press Up or Down to change the outdoor temperature to switch to fossil fuel heating. Press NEXT to continue.

Htg Temp Lmt 160
U/D/NEXT

Press Up or Down to change the heating temperature limit. Press NEXT to continue.

Clg Temp Lmt 45
U/D/NEXT

Press Up or Down to change the cooling temperature limit. Press NEXT to continue.

Total Zones Used 3
U/D/NEXT

Press Up or Down to change the number of zones being used. Press NEXT to continue.

Selecting Type of Thermostat

If gas/electric equipment is selected, only a heat/cool thermostat can be used in all zones. If heat pump equipment is selected, a heat/cool or a heat pump type thermostat can be used in Zone1. Thermostats in Zones 2 and 3 are always heat/cool types.

Select Tstat Options Y/N

Press Yes to select the thermostat type used in each zone.

Zone 1 1Stg HC Tstat Y/N

Press Yes to select the heat/cool thermostat for that zone. Press No to see other thermostats that can be used in that zone.

Changing Zone Sizes

Zones can be set to the same size or each zone can be set differently. The size of the zones are in a weighted zone value. If zones are equal size, the weighted zone value is 1.0 zones. The examples below show a 3-zone installation with different zone sizes.

| | Zone CFM | Calculate Weighted Value | Zone Size |
|-------|----------|--------------------------|-----------|
| Zone1 | 400 CFM | 3 x 400/1200 | 1.0 zones |
| Zone2 | 600 CFM | 3 x 600/1200 | 1.5 zones |
| Zone3 | 200 CFM | 3 x 200/1200 | 0.5 zones |
| | 1200 CFM | | 3.0 zones |

Zone size is calculated by multiplying the total number of zones (3) by the zone CFM (400) divided by the total CFM (1200). The calculation can also be done using square footage or percent demand.

Important!

The total of the zone sizes should always equal the total number of zones.

Change Zone Size Y/N

Press Yes to change the zone sizes or press NEXT to continue to next menu selection.

Are All Zones Equal Size Y/N

Press Yes to set all zone sizes the same or press No to set the size of each zone.

Zone 1 Size 1.0
U/D/NEXT

Press Up or Down to set the size of the zone. Press NEXT to set the size of the next zone.

Zone 2 Size 1.5
U/D/NEXT

Press Up or Down to set the size of the zone. Press NEXT to set the size of the next zone.

Zone 3 Size 0.5
U/D/NEXT

Press Up or Down to set the size of the zone. Press NEXT to continue to the next menu selection.

Bypass Control

There are a number of bypass methods that can be used with the panel as shown below.

No Bypass

If the ducts are sized for larger airflow and there is only 2 or 3 zones, no bypass may be acceptable. Or each zone damper can be set to not fully close. The actuator has a cam that can set the closed position from fully closed to about 50% closed to provide some bypass.

With actuator in the Open position, loosen screw, rotate cam CW and tighten screw.



Barometric Damper with Bypass Duct

If a mechanical bypass damper is being used with a bypass duct, select Ext Baro.

Model ProBMR-XX
Bypass Mechanical Damper



The bypass damper must be sized to bypass the total system CFM minus the CFM of the smallest zone. The weights on the arm of the bypass damper should be set so the damper is fully open and open enough to eliminate any noise that may occur when only the smallest zone damper is open.

Bypass Using the Non-Calling Zone Dampers

The non-calling zone dampers can be opened just enough to keep the airflow in the calling zones from being too high or noisy. The PDMI3 can be used set the bypass position for each zone in heating and cooling during installation.

Selecting the Bypass Option

Change Bypass Options Y/N

Press Yes to change the Bypass options or press No to continue to next menu selection.

Bypass Ext Baro Y/N

Press Yes if bypass is controlled by a bypass duct and barometric damper or using the Close stop position on the actuators. Or press No to display other bypass options.

Bypass ZoneDmprs Y/N

Press Yes if bypass is achieved using the non-calling zone dampers. Or press No to return to the first option.

When non-calling zone dampers are used for bypass, the amount of bypass can be set for each zone being used in heating and cooling.

Zone1 Htg 50%
BP Pos U/D/NEXT

Press Up or Down to adjust the bypass position of the damper when it is being used for bypass. Press Next to set the bypass position of the next damper.

Zone1 Clg 50%
BP Pos U/D/NEXT

Press Up or Down to adjust the bypass position of the damper when it is being used for bypass. Press Next to set the bypass position of the next damper.

Zone2 Htg 50%
BP Pos U/D/NEXT

Press Up or Down to adjust the bypass position of the damper when it is being used for bypass. Press Next to set the bypass position of the next damper.

Zone2 Clg 50%
BP Pos U/D/NEXT

Press Up or Down to adjust the bypass position of the damper when it is being used for bypass. Press Next to set the bypass position of the next damper.

Zone3 Htg 50%
BP Pos U/D/NEXT

Press Up or Down to adjust the bypass position of the damper when it is being used for bypass. Press Next to set the bypass position of the next damper.

Zone3 Clg 50%
BP Pos U/D/NEXT

Press Up or Down to adjust the bypass position of the damper when it is being used for bypass. Press Next to display the next menu selection.

To Reduce the Airflow into the Calling Zones

Increase the bypass positions.

To Reduce the Airflow into the Non-Calling Zones

Decrease the bypass positions.

Although both the calling and non-calling zones are receiving conditioned airflow, the calling zone is being conditioned typically 3-4 times faster than the non-calling zones.

Staging Heating and Cooling Calls

Staging is controlled by the number of zones calling for heating or cooling and by a timer that monitors the amount of time a call has been active. Each stage can be set to activate based on the total of the weighted zones calling or set to only be activated by the timer.

Title24 now requires delaying auxiliary electric strip heating in a heat pump so it does not activate on a recovery from a setback temperature. The stage used for auxiliary heat can be set to activate only by the timer.

Change Staging Y/N

Press Yes to change the staging of heating and cooling calls or press No to continue to next menu selection.

Limit Staging By Zones Y/N

Press Yes to select staging based on the number of zones calling or press No to display other staging options.

Timed UpStaging Y/N

Press Yes to select timed upstaging or press No to display other staging options.

Limit Staging OD Temp Y/N

Press Yes to select limiting upstaging based on outdoor temperature or press No to display the first staging option.

Staging Based on Zone Calls

Staging is controlled by the number of zones calling for heating or cooling.

Limit Staging By Zones Y/N

Press Yes to select staging based on the number of zones calling.

Stage 1 Lmt 1.0
Zones U/D/NEXT

Press Up or Down to set the weighted zones required to activate a Stage1 call. In installations with three or more zones and one small zone, the limit can be set above the small zone's size to prevent it, alone, from activating a call and have excessive bypass. Press NEXT to continue.

Stage 2 Lmt 3.0
Zones U/D/NEXT

Press Up or Down to set the weighted zones required to activate a Stage2 call. Press NEXT to continue.

Stage 3 Lmt Tmr
Zones U/D/NEXT

Press Up or Down to set the weighted zones required to activate a Stage3 call. Holding Up, the limit will increase to the maximum value (3.0 for a 3-zone panel) and then display "Tmr" to indicate this staging is controlled by the staging timer and not the weighted zones calling. Press NEXT to continue to the next menu.

Staging Based on Call Timer

Staging is controlled by the number of minutes heating or cooling has been calling. The Timer monitors the continuous call time and forces staging when the call time exceeds the preset limits.

Timed UpStaging Y/N

Press Yes to select timed upstaging.

Stage 2 Minutes 20 U/D/NEXT

Press Up or Down to set the number of minutes of continuous call time required to upstage to Stage2. Press NEXT to continue.

Stage 3 Minutes 30 U/D/NEXT

Press Up or Down to set the number of minutes of continuous call time required to upstage to Stage3. Press NEXT to continue to the next menu selection.

Limit Staging Based on Outdoor Temperature

Staging can be disabled if the outdoor temperature exceeds the preset limits.

Limit Staging OD Temp Y/N

Press Yes to select limiting upstaging based on outdoor temperature.

OD Temp Lmt Heating 60 U/D/NEXT

Press Up or Down to set the outdoor temperature to disable staging heating. If the outdoor temperature is above the limit, staging of heating is disabled. Press NEXT to continue.

OD Temp Lmt Cooling 55 U/D/NEXT

Press Up or Down to set the outdoor temperature to disable staging cooling. If the outdoor temperature is below the limit, staging of cooling is disabled. Press NEXT to continue to the next menu selection.

Fresh Air Control for Title24 and ASHRAE 62.2

A damper can be used to bring outdoor air into the return to maintain a healthy home. The equipment fan draws in the outdoor air and mixes it with the return air from the home. The panel attempts to fulfill the required fresh air during heating and cooling calls. As the end of each hour approaches, the panel will open the fresh air damper and activate the indoor fan (G) if additional fresh air minutes are required.

The PDMi3 allows the installer to directly set the minutes per hour the fresh air damper is open or the PDMi3 can calculate the required CFM of fresh air based on the area of the home and the number of bedrooms.

Fresh air operation is factory set to Off.

Change or Set Fresh Air Operation

Change Fresh Air Option Y/N

Press Yes to change the Fresh Air Option. Press no to continue to another option.

Fresh Air Off Y-On/N-Off

Press Yes to turn the Fresh Air Option On or No to turn it Off.

Direct Entry of Minutes per Hour of Fresh Air

If the contractor has calculated the CFM for fresh air and sized the damper to operate for a number of minutes each hour, the minutes can be directly entered.

Fresh Air Min/Hr Enter Y/N

Press Yes to enter the minutes of fresh air operation required each hour. Press No to select calculating the CFM and minutes per hour.

Fresh Air Min/Hr 20 U/D/NEXT

Press Up or Down to set the number of minutes the fresh air damper and indoor fan must operate each hour to meet the fresh air requirements. Press NEXT to continue.

PDMi3 Calculates Minutes per Hour of Fresh Air

The PDMi3 allows the installer to calculate the required CFM of fresh air based on the area of the home and the number of bedrooms. The calculated CFM is the CFM required if the fresh air damper is continuously open and the indoor fan operating to draw in fresh air.

The PDMi3 tutors the installer to set the area of the home in square feet and the number of bedrooms. It then calculates and displays the minimum amount of outdoor air required to meet the requirement for the home. This is the amount required if the indoor fan was running continuously.

If the fresh air intake is increased, the fresh air operation can occur mostly during calls to minimize dis-comfort. The PDMi3 will then display the number of minutes of fresh air operation required each hour based on the minimum CFM and the selected CFM.

Fresh Air Calc Y/N

Press Yes to have the PDMi3 calculate the fresh air requirements. Press No to directly set the minutes per hour of fresh air operation.continue.

Area SqFt 2200 U/D/NEXT

Press Up or Down to set the area of the home. Press NEXT to continue.

Bedrooms 4 U/D/NEXT

Press Up or Down to set the bedrooms in the home. Press NEXT to continue.

Fresh Air CFM 70 U/D/NEXT

The PDMi3 shows the minimum CFM required when the fresh air duct is operating continuously.

Fresh Air CFM 210 U/D/NEXT

Press Up or Down to adjust the fresh air CFM. Increasing the CFM to 210 would lower the number of minutes per hour of fresh air operation allowing it to be accomplished during calls. Press NEXT to continue.

Fresh Air Min/Hr 20 U/D/NEXT

The PDMi3 shows the number of minutes of fresh air operation each hour. Press Up or Down to adjust the fresh air minutes each hour. Press NEXT to continue to the next menu selection.

Limit Fresh Air Based on Outdoor Temperature Changing Advanced Options

Fresh air operation can be disabled if the outdoor temperature exceeds the high and low temperature limits. A TS3 outdoor temperature sensor is required.

Limit Fresh Air By ODTemp Y/N

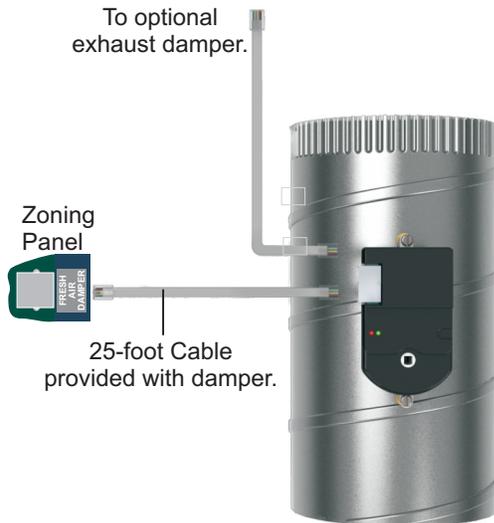
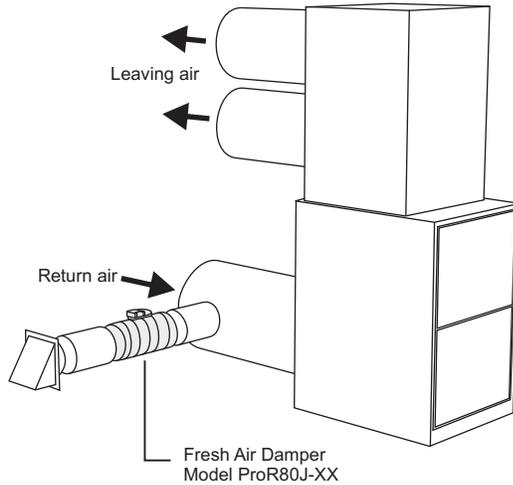
Press Yes to set outdoor temperature limits for fresh air operation or No to continue to next option.

Low ODTemp Limit 30 U/D/NEXT

Press Up or Down to set the low outdoor temperature limit for fresh air operation. Press NEXT to continue.

High ODTemp Limit 30 U/D/NEXT

Press Up or Down to set the high outdoor temperature limit for fresh air operation. Press NEXT to continue.



Change Advanced Options Y/N

Press Yes to select advanced options such as purge, opposite system service, heat or cooling priority, automatic emergency heat control, moderate weather staging inhibit and others. Press No to continue to next menu selection.

Op System Option Y/N

Press Yes to select opposite system service. The panel normally services heating or cooling calls based on the number of calls from the zones. If there are more heating calls than cooling it will service heating and vice versa.

Opposite System option forces it to service the minority calls after it has been calling for a period longer than the set limit. Press No to continue.

Op System Minutes 20 U/D/NEXT

Press Up or Down to set the number of minutes the opposing system must call before switching to service it. Press NEXT to continue.

Purge After Call Y/N

Press Yes or No to select Purge. Purge continues to operate the indoor fan after a heating or cooling call to recover heat or cold stored in the mechanical system. Press NEXT to continue.

Purge Time Sec 60 U/D/NEXT

Press Up or Down to set the number of seconds the fan operates at the end of a heating or cooling call. Press NEXT to continue.

Auto Em Heat Control Y/N

Select automatic Emergency heat operation when the outdoor temperature drops below the temperature set.

Auto Em Heat OD Temp 35 U/D/NEXT

Auto Em Heat Control Y/N

When set to Yes, all heating calls are treated as Em heat calls until the Zone that called for Em heat calls for non-Em heat or cooling.

Priority Heating Equal Calls Y/N

This option determines whether a heating or cooling call is activated when an equal number of zones are calling for heating and cooling. Press No to display Heating or cooling. Press Yes to select the system displayed and continue.

Change Timing Options Y/N

Press Yes to change the minimum run and off times or press No to continue.

Min Run Time 2
Minutes U/D/Next

Press Up or Down to set the number of minutes a heating or cooling call must run. Press NEXT to continue.

Min Off Time 2
Minutes U/D/Next

Press Up or Down to set the number of minutes a heating or cooling call must be off before another call is started. Press NEXT to continue.

Testing the Installation

Display Data And Settings Y/N

Press Yes to display all the option settings, sensor data, call status, error messages and much more. This option only displays settings and data. No setting can be changed. Press No to continue.

Start Panel Test Y/N

Press Yes to start a test of damper operation, cooling system and the heating system.

Start Dmpr Test Y/N

Press Yes to start a test of the dampers to insure they are opening and closing.

All Dampers Open NEXT

All the dampers open and the fan is activated. Check that you have air from the registers in all zones. Press Next to continue.

Damper 1 Closed NEXT

Damper1 closes. Check that there is no air from the registers in Zone1. Press Next to continue.

Damper 2 Closed NEXT

Damper1 opens and Damper2 closes. Check that there is no air from the registers in Zone2. Press Next to continue to test each zone damper.

Start Cooling Test Y/N

Press Yes to start a test of the cooling system to insure discharge temperature is correct

Cooling Stg1 On
DA Temp 56 Next

Press Next to test stage2 cooling or start a heating test (if only 1 cooling stage).

Start Htg Test Y/N

Press Yes to start a test of the heating system to insure discharge temperature is correct.

Heating Stg1 On
DATemp 110 NEXT

Press Next to start a test stage2 heating to insure discharge temperature is correct or return to the main menu if only one stage of heating is used.

Bypass Testing

Start Bypass Test Y/N

Press Yes to start a bypass test. A test will be started based on the type of bypass being used.

Bypass Testing with External Barometric Damper

All Dampers Open
Cooling On Next

Press Next to select which dampers are open and closed.

Damper 1 Open
Clg On U/D/NEXT

Press the Up and Down keys to open or close a damper. Press the Next key to change the next damper.

Damper 2 Closed
Clg On U/D/NEXT

Press the Up and Down keys to open or close a damper. Press the Next key to change the next damper. After setting the dampers to open and close, press the Save key to have the panel position the dampers.

Adjust the barometric damper and check that the airflow to the non-calling zones is low enough.

Press Cancel to end the test and return to the main menu.

Bypass Testing Modulating the Non-Calling Zone Dampers

Damper 1 100%
Clg On U/D/NEXT

To test various bypass settings, use the Up and Down keys to set the position of each zone damper. Fully open is 100% and fully closed is 0%. Press Next to set the next damper.

Damper 2 Closed
Clg On U/D/NEXT

After setting the position of each damper, press the Save key to have the panel position the dampers. Check the airflow in both calling zones and non-calling zones to insure the airflow is acceptable.

Press the Cancel key to cancel the test and return to the main menu.

**Monitor HVAC
Performance Y/N**

Press Yes to display the leaving air temperature, duct pressure and the position of the non-calling zone dampers when used for bypass. Press No to continue.

**LAT 122 Prs 0.55
BP Pos 0% NEXT**

Displays the leaving air temperature and duct pressure (if sensor installed). Bypass position can be viewed by pressing the Menu key. Press No to continue to Show Zone Damper Status. The date is automatically updated every 5 seconds. Press Next to return to the main menu.

**Restore Defaults
Y/N**

Press Yes to restore the panel to the factory settings. Press No to continue.

**Save Options Now
Y/N**

Press Yes to save the options and settings selected. Press No to return to the main menu.

**Save Selections
As Clone Y/N**

Press Yes to save the options as a new clone to be used later. Press No to return to the main menu.

**Description For
Clone 1 NEXT**

Press NEXT to enter the name for Clone 1.

**A
U/D/NEXT/SAVE**

Press Up or Down to select the letter or number. Press NEXT to go to the next letter in the name. Press SAVE to save the clone name.

**Save Clone
Description Y/N**

Press Yes to save the clone data and the name. Press No to return to the main menu.

Limited 5-Year Warranty

The 5-year warranty is limited to the repair or replacement of defective product due to parts failure or defective workmanship.

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