

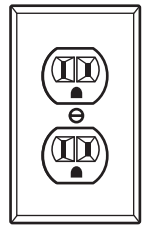
Install to Fit Your Application

NOTE: Prior to installing, serious consideration must be taken to insure this ventilation system will operate properly if integrated with any other type of mechanical system, i.e. a forced air system, or an air handling unit. To insure proper operation & compatibilities of both system, it is required that the airflows of ventilation systems be balanced, by following the procedures found in this manual.

Limitations: The product is for residential applications only. Must be installed in accordance with all national and local regulations, building and safety codes. Flex duct is recommended for connecting to the ERV/HRV collars to reduce vibration noise.

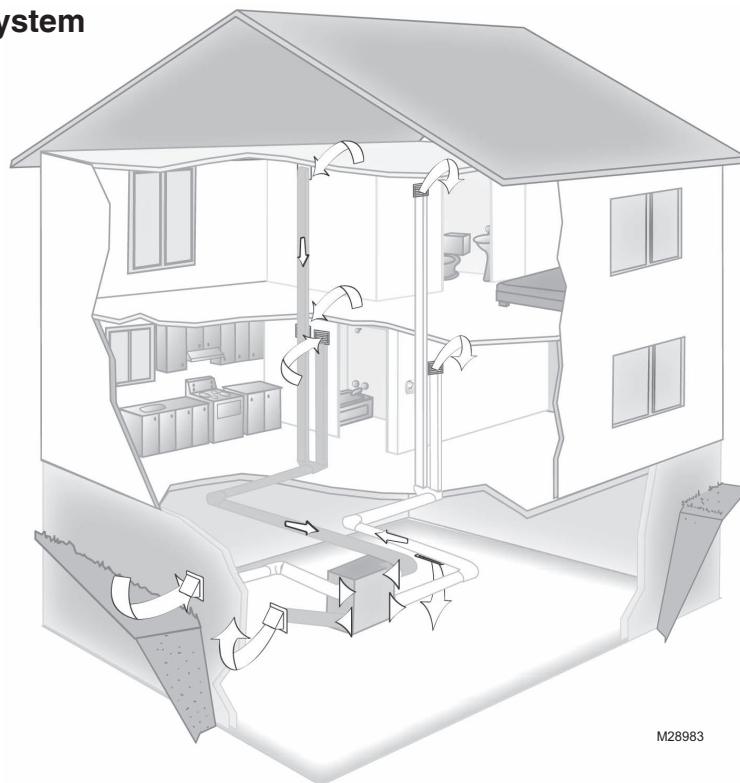
Electrical Requirements:

120 VAC outlet. Ground fault interrupter (GFI) and dedicated circuit recommended.



M24745

A Independent System



M28983

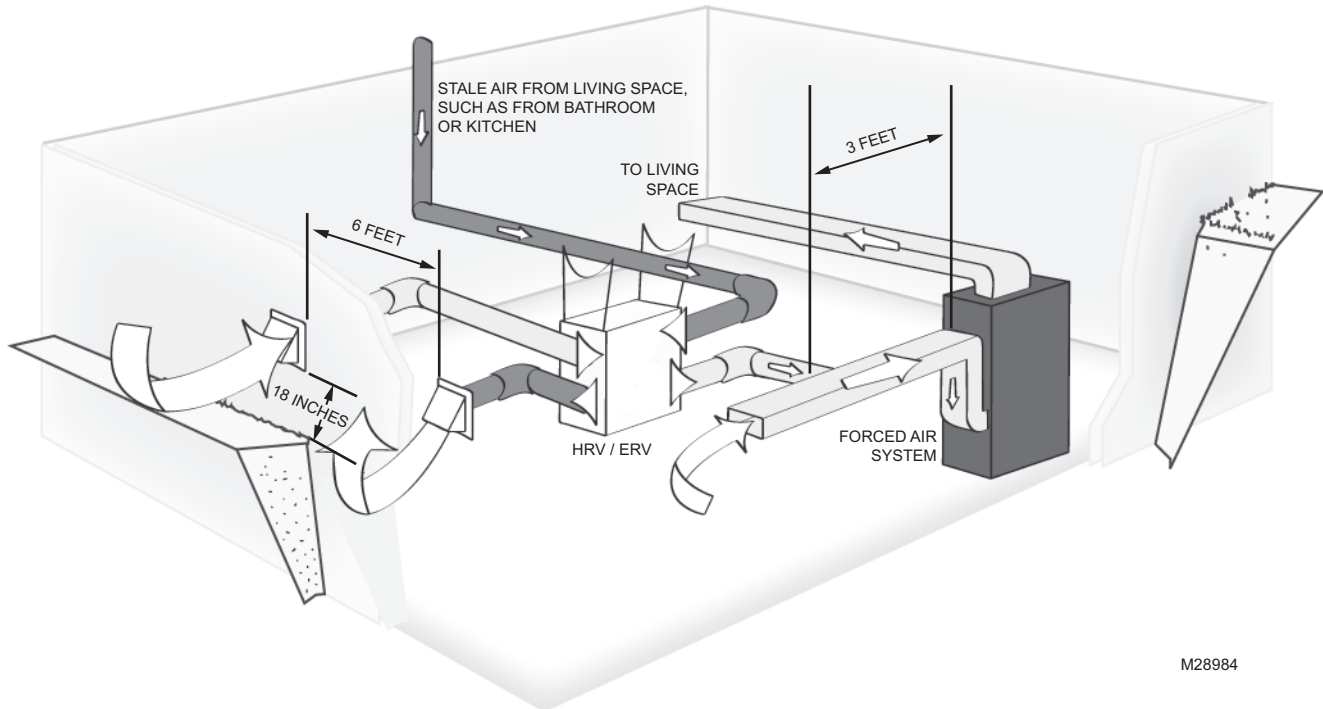
This application uses a devoted duct system for the supply and the exhausting of stale air accumulated in the home.

Honeywell recommends installing fresh air grilles in all bedrooms and living areas and to exhaust the stale air from the bathroom, kitchen, and laundry room.

Install to Fit Your Application (continued)

B

Exhaust at the Source and Supply in the Return



This application uses a devoted duct system for the exhausting of stale air accumulated in the home. The fresh air is introduced into the return air duct and is distributed through the home by the existing supply air ductwork of the forced air system.

Make sure when using this application that your fresh air duct connection to the forced air system return air duct is at least 3 feet from the forced air system. You should check with your local code or the forced air system's manufacturer.

The forced air system's blower does not have to run when the unit is operating, but is recommended for maximum effectiveness.

NOTE: For the minimum distance between the fresh air connection and the forced air system, check with your local building codes and forced air system manufacturer.

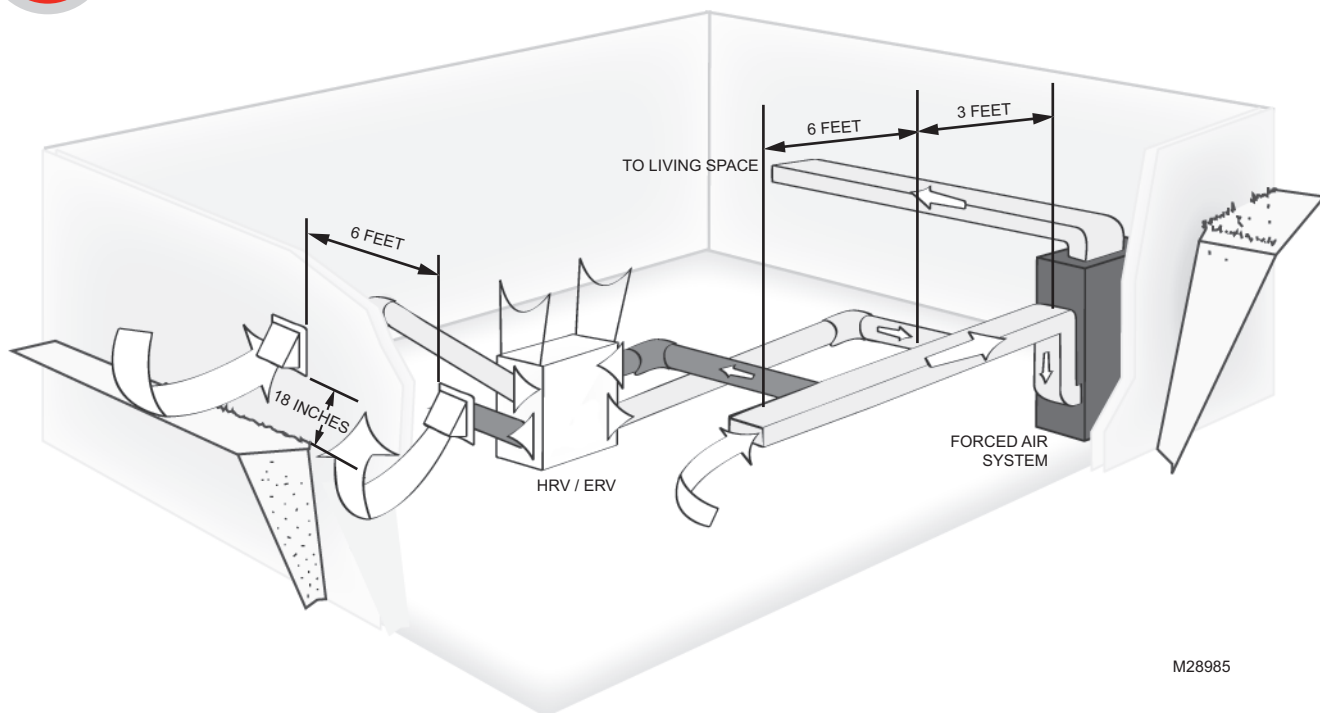
NOTE: For dwellings with multiple forced air systems, Honeywell recommends one ERV/HRV unit per system.

NOTE: Refer to the Wiring section (beginning on page 18) for instructions to connect the unit to operate the forced air system with the ERV/HRV unit.

Install to Fit Your Application (continued)



Exhaust and Supply in the Return



When using this application make sure that there is a minimum of 6 feet between the fresh air and exhaust air connections of the ERV/HRV unit in the return air duct. Supply air from the ERV/HRV unit must be at least 3 feet from the forced air system. These distances can be different from one region to another; you should check with your local code or the forced air system's manufacturer.

NOTE: For minimum distance between return and forced air system, check with your local building codes and forced air system manufacturer.

NOTE: Fresh air must always be down-stream from the exhaust air in the return air duct of the forced air system.

NOTE: Furnace blower is required to operate when ventilation is required. Set the furnace blower to run continuously, or interlock electrically (low voltage).

Installation Steps

1

Installation Kit

Ensure that you have all of the following installation items:

4 Round Duct Collars (VNT5150 and 5200)



4 Oval Duct Collars (VNT5070)



Installation Kit:

- 2 Flexible 6 in. Vinyl Ducts (NVT5150 and VNT5200 only)
- 1 Condensation Drain Line (10 in.)
- 1 Drain Adapter with Nut
- 4 Tie Wraps (30 in.)
- 16 Hex-head screws (1/4 x 5/8 in.)
- 4 Hex-head screws (1/4 x 1 in.)
- 4 Washers
- 1 Drain cap (VNT5070E1000, VNT5250E1000 and VNT5200E1000 only)
- 1 power cord, 120 Vac (not shown)



2

Installation Area

The ERV/HRV unit should be installed in a mechanical room or as close to an outside wall as possible.

The ERV/HRV unit must always be installed in an area where the air is conditioned to avoid freezing the condensate line.

The contractor should install the unit in an area that allows the homeowner easy access for maintenance. It is very important to install an electric receptacle (120 Vac) near the unit, a separate circuit breaker is also recommended. It is best to have access to a condensate drain near the ERV/HRV unit to avoid having to use a condensate pump.

NOTE: Installation is not recommended in unconditioned areas such as an attic or crawl space where the temperature can fall below 32 °F (0 °C).

NOTE: Ducting in unconditioned areas must be fully sealed and insulated.

Installation Steps (continued)

3a

Hanging the VNT5150 or VNT5200

The ERV/HRV unit enables you to save time and effort by offering a simplified hanging system.

TIP: Removing the core unit makes installation easier since the unit weighs less without the core inside.



1. Attach straps to joist using the supplied washers and four 1 in. hex-head hanging screws.



2. Pull on middle of strap while gently lifting unit upward to raise the unit.



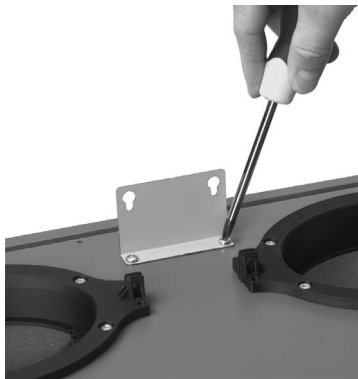
3. Make final adjustments to ensure that the HRV/ERV is level.

NOTE: If the unit is not level, improper drainage will occur and could lead to moisture and leakage problems.

Installation Steps (continued)

3b

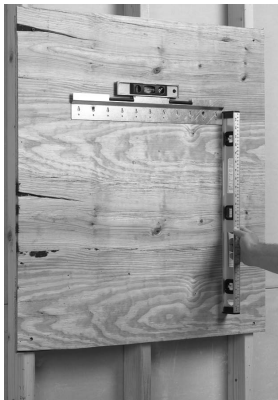
Mounting the VNT5070



1. Fix the control module bracket to the top of the VNT5070 using the supplied mounting screws.



2. Slide the control module onto the bracket using the key holes.



3. Fix the wall mount bracket to two 2x4s or to a precut sheet of plywood using the supplied mounting screws.



4. Hang the unit on the bracket.



5. Secure with two sheet metal screws.



NOTE: When these mounting steps are complete, resume normal installation procedures beginning on page 17, "Installing the flex duct to the ERV/HRV."

Installation Steps (continued)

4

Installing the flex duct to the ERV/HRV

TIP: Honeywell recommends using approximately 16 inches of flexible duct (supplied in kit with VNT5150 and VNT5200) between the unit and the rigid duct for noise dampening. The flex duct is mounted to the unit the same way as the insulated flex.



1. Insert the vinyl duct over the hooks on the duct collar and seal with a supplied 30 inch tie wrap.



2. Insert insulation inside the outer ring of the duct collar.



3. Finish by taping the duct on the collar.



- 4a. Slide collar onto unit (VNT5150 and 5200)

TIP: For the VNT5070 unit, balancing should be done before taping the insulation onto the collar. See balancing steps on page 30.



- 4b. Attach collar onto unit (VNT5070)



5. Secure collar with the supplied 5/8 in. hex-head screws.

IMPORTANT: Always fix and secure each collar using four of the 5/8 in. screws supplied. This step is critical in order to prevent condensation accumulation.

TIP: Attach the flex duct to the collar first, and then attach the collar to the unit.

Installation Steps (continued)

5

Installing the condensation drain line

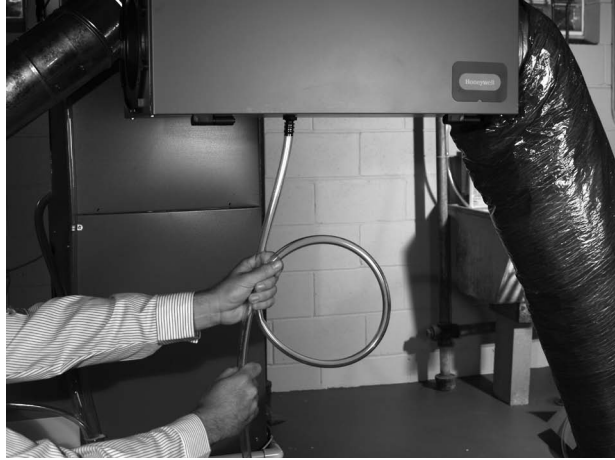
Insert the threaded drain adapter through the bottom of the unit and hand tighten the plastic nut supplied with the drain kit.

Use a wrench to tighten the nut another half turn to ensure a complete seal.

Install the condensate tubing by pushing the clear plastic tubing over the drain adapter.

Make a condensate trap by looping the clear plastic tubing. This loop will prevent foul odors from entering the unit.

Use a condensate pump if you don't have access to the floor drain.



Drainless Application

NOTE: If installing an ERV unit (VNT5150E1000, VNT5200E1000, VNT5070E1000) in a region where the outdoor temperature does not drop below freezing, the condensate drain line does not need to be installed and the unit may be installed as a drainless application.

1. Insert the threaded drain adapter through the bottom of the ERV with the drain connection inside of the unit as shown in the figure.
2. Fit the rubber washer over the drain adapter and then attach the plastic nut.
3. Hand tighten the plastic nut supplied with the drain kit.
4. Use a wrench to tighten the nut another half turn to ensure a complete seal.
5. Attach the drain cap to the drain adapter inside the unit.



Installation Steps (continued)

6

Connecting the power cord

ERV/HRV Power Cord

Insert the power cord on top of the unit. Press firmly to make sure the power cord is secure.

IMPORTANT: Do not plug the power cord into the wall receptacle at this time.

Electric Wall Outlet

Honeywell recommends that the unit has a dedicated receptacle with 120 VAC.

Avoid connecting the unit to the wall receptacle with an extension cord.

Honeywell does not recommend the use of an extension cord.

Ensure that the receptacle's polarization is correct.



NOTE: If the LED light on the ERV/HRV control panel remains green, the motors do not energize, and the controls do not operate; this can indicate that the polarization in the main AC outlet is inverted.

IMPORTANT: Always consult a qualified technician to ensure proper installation of main power.

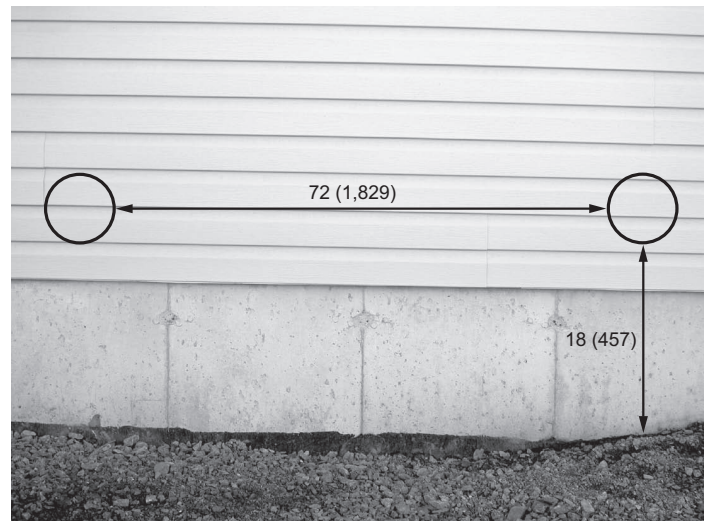
7a

Installing outside hoods for the fresh air and the exhaust

Locate the outside hoods at least 18 inches (0.46 m) above grade and at least 72 inches (1.83 m) apart.

NOTE: Do not locate the fresh air vent hood close to known sources of pollutants such as dryer vents.

IMPORTANT: Always consult your local code for spacing requirements in your area.



M32372

Installation Steps (continued)

7b

Optional Matrix hood (50063805-009) installation for fresh air and exhaust air

NOTE: Only for applications up to 115 CFM maximum speed. Higher airflow rates are limited by higher static pressures and the potential of cross-contamination between the supply and exhaust air streams. The Matrix hood design is suitable for smaller spaces commonly found in town homes and condominiums which require less airflow rates.



See Matrix hood literature for step-by-step instructions.

Automated Defrost

The ERV and HRV units are equipped with an automatic defrost feature to eliminate any ice build up on the core.

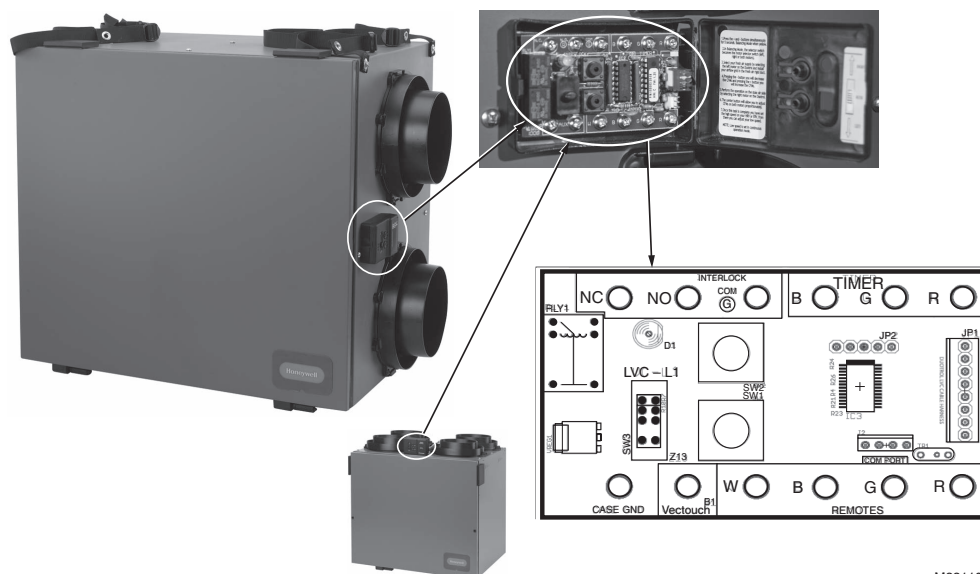
- Automatic defrost is initiated once every hour when the fresh air supply temperature drops to 23°F (-5°C) or colder.
- The defrost cycle operates by turning off the supply fan while continuing to operate the exhaust fan.
- The exhaust fan speed is adjusted proportionally based on the outdoor temperature, initially operating at low speed.
- As the outdoor temperature continues to drop, the exhaust fan speed will increase, and will operate at maximum speed when the outdoor temperature is -4°F (-20°C) or less.
- Defrost cycle runs for 4 minutes with the supply fan off, followed by 40 minutes of continuous normal operation.
- Defrost cycles will continue to repeat as long as the temperature is 23°F (-5°C) or less.

Wiring



CAUTION: Voltage hazard.
Can cause equipment damage.
Disconnect power from the unit before beginning installation.

Terminal Description



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The wiring terminal block is located behind the control module door on the side of the unit.

To access the terminal block, open the control panel door by swinging it open and to the right as shown above.

Wiring (continued)

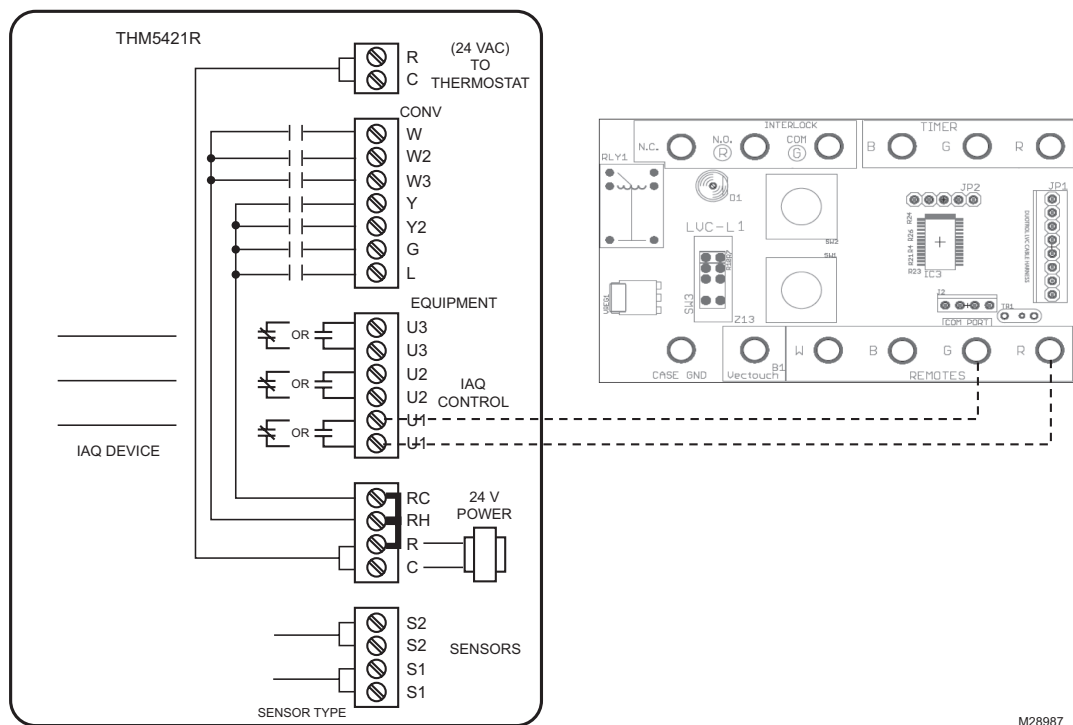
Wiring with Remote Controls

CONT mode - Ventilator runs continuously on low speed. A ventilation call from a control boosts the ventilator into high speed.

INT mode - The ventilator is OFF until a ventilation call from a wall control turns it on in high speed..

Controls Wiring

Follow this diagram if using a **Prestige™ 2-wire IAQ and RF EIM.**

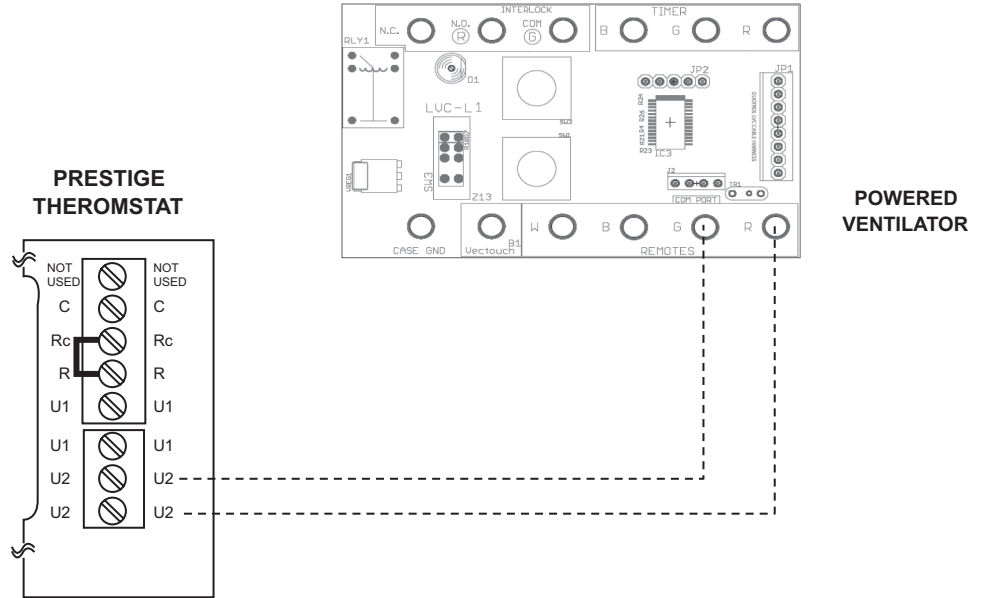


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TIP: Combine Prestige 2.0 thermostat with wireless vent boost remote to provide ventilation boost control from anywhere in the home.

Wiring (continued)

Follow this diagram if using a **Prestige™ Thermostat** (Interlock not shown).



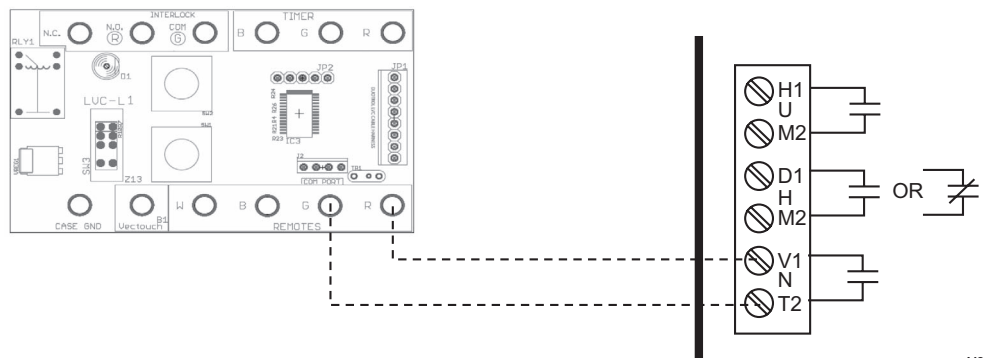
U1/U1 Configurable IAQ relay for humidifier, dehumidifier, or vent
U2/U2 Configurable IAQ relay for humidifier, dehumidifier, or vent

M28988

TIP: Combine Prestige 2.0 thermostat with wireless vent boost remote to provide ventilation boost control from anywhere in the home.

VisionPRO IAQ Equipment Interface Module

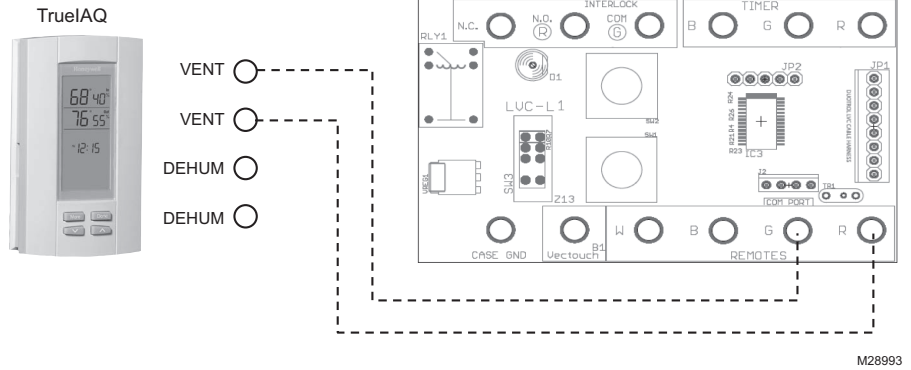
Follow this diagram if using a **VisionPRO IAQ**.



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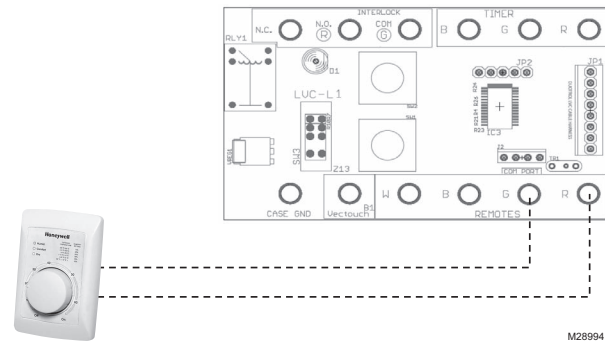
Wiring (continued)

Follow this diagram if using a **TrueIAQ (DG115EIQ)**.



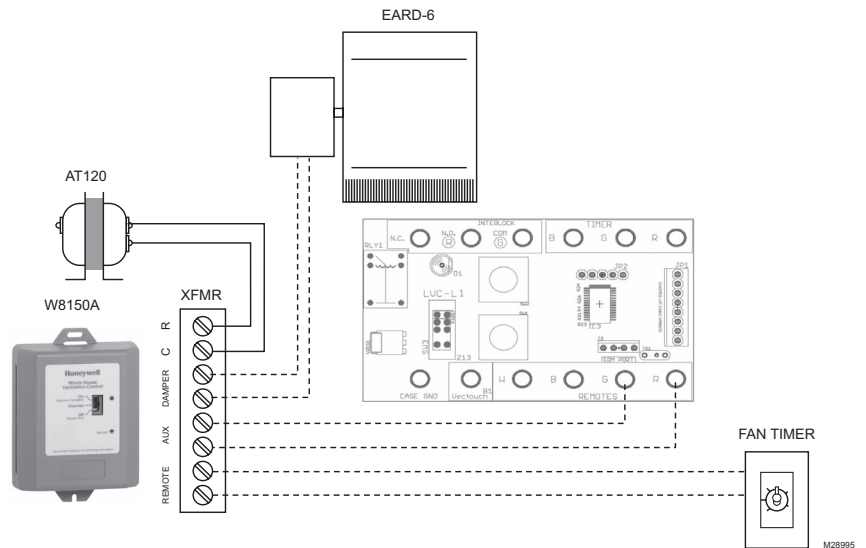
M28993

Follow this diagram if using a **Dehumidistat**.



M28994

Follow this diagram if using a **W8150 Ventilation Control**

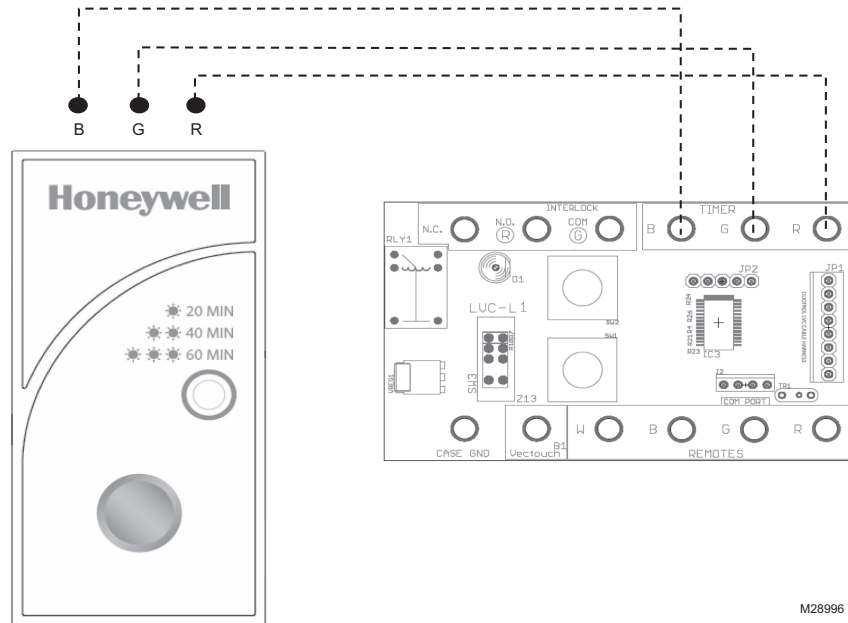


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Wiring (continued)

Follow this diagram if using the **Honeywell 20/40/60 Minute Boost Control Timer**.

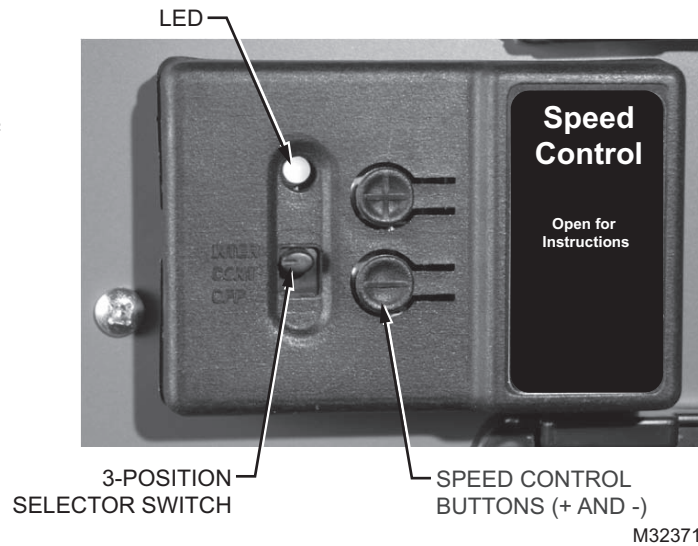
Note: Multiple timers can be wired in parallel.



Control Panel

The control panel has a 3-position selector switch and “+” and “-” buttons for speed control. The color of the LED indicator indicates the current function of the selector switch.

- GREEN LED = Mode Control (normal operating mode)
- YELLOW LED = Balancing Control



Control Panel (continued)

Speed Control used as a Mode Control

When the LED indicator is green, the selector switch functions as a Mode Selector. The selections are:

- **INTER (Intermittent):** When the selector switch is in the intermittent position the unit will run only when there is a call for ventilation by any external control. At that time the unit will run on high speed until the condition is satisfied.
- **CONT (Continuous):** When the selector switch is in the continuous position the unit will run continuously on low speed except when there is a call for override by any control.
- **OFF:** When the selector switch is in the off position the unit will not operate even when there's a call for ventilation by an external control.
- **(+) and (-) buttons:** Used to adjust the continuous speed setting.

Speed Control used as a Balancing Control

In balancing mode the LED indicator is yellow, and the selector switch functions as a Balancing Control to set the high speed of the motors for balancing purposes (Fresh air, Exhaust air, and Both motors). The selections are:

- **INTER:** Selects the exhaust air motor.
- **CONT:** Selects both exhaust and fresh air motors.
- **OFF:** Selects the fresh air motor.

NOTE: Continuous low speed is 50% of the set high speed.

NOTE: See Balancing Steps on page 25.

Speed Control used as a Motor Control

- **+ Button:** Increase the speed of the selected motor.
- **- Button:** Decrease the speed of the selected motor.

NOTE: See Balancing Steps on page 25.

Balancing Steps

NOTE: Perform the balancing steps with the HVAC equipment fan turned ON if the ERV/HRV unit is ducted into an HVAC system.

1

- a. Ensure that the speed control selector switch is in either the INTER or CONT position.
- b. Press the (+) and (-) buttons simultaneously for 5 seconds until the LED indicator light turns yellow, which indicates that you are in balancing mode.

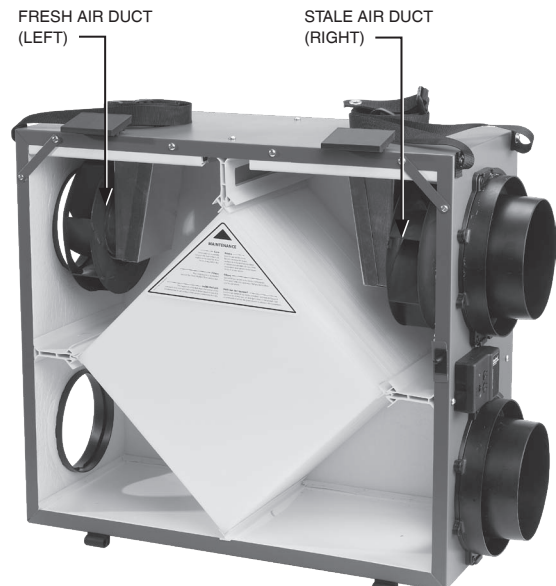
When in balancing mode, the selector switch becomes the motor selector switch. The switch positions become: INTER = Right motor (exhaust air), CONT = Both motors, and OFF = Left motor (fresh air).

Balancing Steps (continued)

2

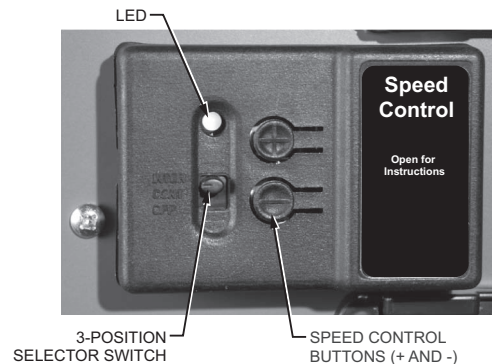
- Use a pitot tube or flow station to measure the air flow in the fresh air duct and exhaust air duct. (For the VNT5070, make airflow measurements by following the procedure on page 30.)
- Move the mode selector switch to adjust the air flow in the duct with the higher reading.
INTER: Exhaust air (right)
OFF: Fresh air (left)
- Press the (+) or (-) buttons to adjust the air flow to the desired high speed setting.
- Move the mode selector switch to the CONT position (to proportionally adjust the speed of both motors at the same time).

NOTE: For airflow measurements on VNT5070, follow the procedure on page 31.



3

- Press the (+) and (-) buttons simultaneously to exit balancing mode .
- Indicator light turns green.
- Continuous speed will be 50% of measured CFM.



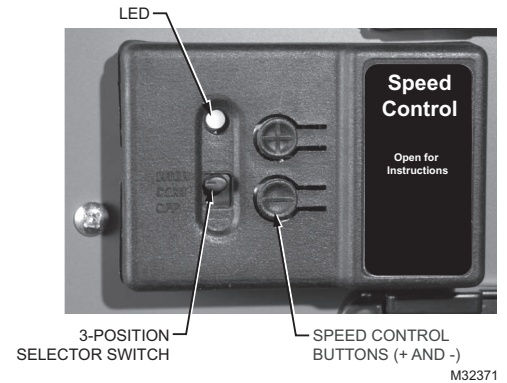
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Balancing Reset

NOTE: Once balancing is completed, balancing cannot be changed without resetting the unit.

To reset:

1. Press the (+) and (-) buttons simultaneously for 10 seconds.
2. Indicator light will turn yellow at 5 seconds.
3. Indicator light will turn green at 10 seconds.
4. Release both buttons.
5. Unit has been reset and can be put into balancing mode again.



Checkout

- Apply power to the unit. Move the selector switch to the CONT position to verify that the unit turns on in continuous speed.
- Initiate a ventilation call from each of the external controls. Verify that the ERV/HRV unit turns on in high speed.
- Return the selector switch to the desired position and the external controls to the desired settings.
- Inspect the ducting to ensure that there are no kinks and correct as necessary.

Airflow Measurements - VNT5070 only

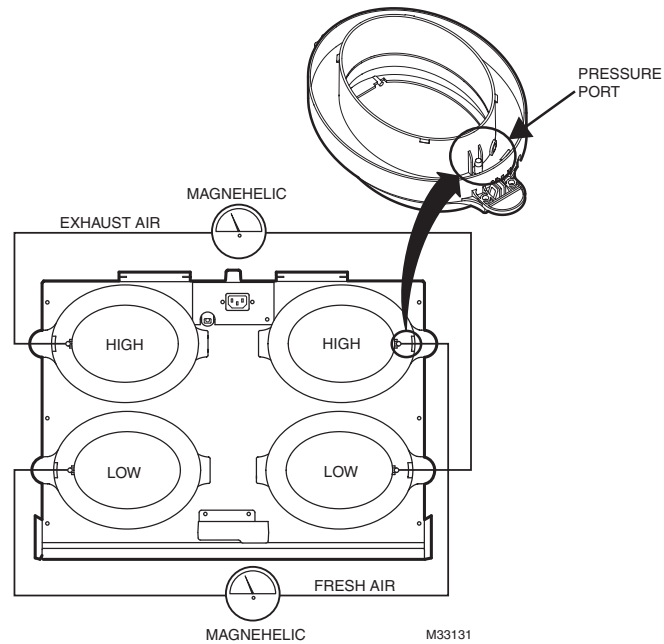
The VNT5070 ventilators are balanced by utilizing pressure ports located on the duct collars and a pressure-airflow correlation table provided as a decal on the side of the unit.

NOTE: The VNT5150 & VNT5200 ventilators are not provided with pressure ports or correlation charts. Instead, they are balanced by using air flow grids or pitot tubes which measure airflow directly in each airstream.

Pressure-airflow correlation table:

Pressure Differential		Fresh Air		Exhaust Air	
Pa	in. W.C.	L/s	CFM	L/s	CFM
50	0.20	44	93	43	90
62	0.25	41	87	40	85
75	0.30	39	83	37	79
87	0.35	37	79	36	77
100	0.40	35	74	36	76
112	0.45	33	69	34	71
125	0.50	30	65	32	67
137	0.55	29	61	28	60
150	0.60	26	56	24	51
162	0.65	24	50	22	47
175	0.70	22	46	19	41
187	0.75	19	41	17	36
199	0.80	17	36	15	31

Airflow Measurements - VNT5070 only (continued)



1

Pre & Post Balancing Steps

- Install the flexible duct inner liner (vapor barrier) over the collar and seal with tape, mastic, etc. Note-flexible insulation should be pulled back and away from the duct collar to allow access to pressure ports.
- Proceed with balancing steps described below.
- Plug the pressure ports.
- Pull flexible duct insulation over duct collar and stuff inside the double collar; seal insulation to duct collar with tape.

2

Balancing Steps

- Measure pressure differential across the EXHAUST air stream high and low ports using a Magnehelic gauge or other pressure gauge.
- Measure pressure differential across the FRESH air stream high and low ports using a Magnehelic gauge or other pressure gauge.
- Look up corresponding air flows from the pressure-airflow correlation table.
- Adjust airflows to a balanced condition by adjusting blower motor speeds.
- Usually the blower with more airflow is adjusted to the lower blower airflow rate.
- Motor adjustments are described in previous section.