



DEHUMIDIFIER

507393-01
2/2019
Supersedes 9/2015

HEALTHY CLIMATE®
DEHUMIDIFIERS

APPLICATION QUICK START GUIDE FOR HEALTHY CLIMATE® MODEL HCWHD3-070, HCWHD3-095, AND HCWHD3-130 DEHUMIDIFIERS

This guide provides a quick and simple guide for set-up based on the installation application. Each application sheet contains parts needed, illustrations, and the sequence of operation for the specific application. The Application Quick Start Guide is to be used as a reference only. Installation is to be performed by qualified heating and air conditioning professionals in accordance with the Installation Manual provided with the dehumidifier.

Application	Primary Zone to Dehumidify	Secondary Zone to Dehumidify	Control Type	Application Sheet No.
Single Zone	Whole House or Basement	NA	On-Board	1
			External	2
Remote Control (Single Zone)	Crawlspace, Sealed Attic, Storage, Basement	NA	Remote - Y6456 in the Living Space	3
Two Zone	Whole house	Basement	On-Board	4
			External in Primary	5
Two Zone	Basement	Whole house	On-Board	4
			External in Primary	5
Using the Ventilation Feature				6

Application Sheet 1 — Single Zone Using Internal Control

Parts Needed (additional parts may be required):

- ___ Insulated duct
- ___ Duct fittings & hardware
- ___ Grilles (if required)
- ___ Drain Pan and Float Switch (if required)
- ___ Thermostat wire

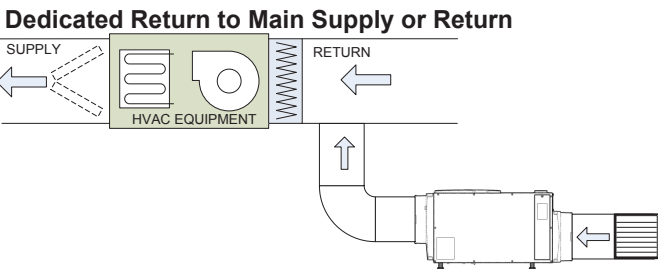
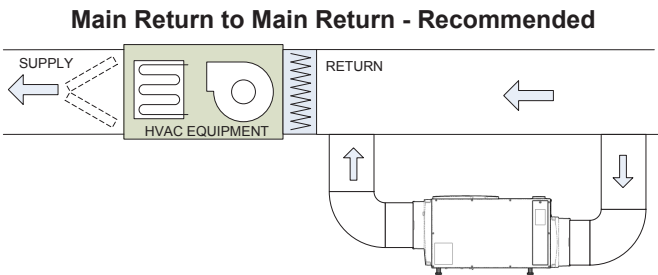


Figure 1 Dehumidifier Ducted to HVAC System

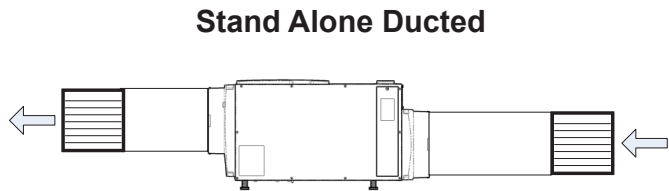


Figure 2 Dehumidifier Ducted Directly

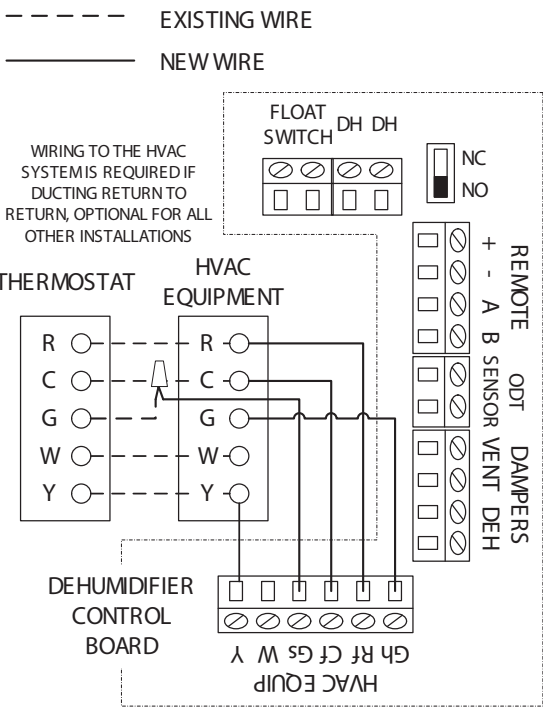


Figure 3 Wiring (shown with “disable with AC” feature being used)

Sequence of Operation

The dehumidifier will automatically “sample” the air by turning on its blower (and the HVAC blower if this option has been wired – see **Figure 3**), and measuring the relative humidity (RH) once every hour. Sampling will also occur when the RH setting is lowered using the UP or DOWN buttons on the control.

During sampling, if the RH of the air is above the setting the dehumidifier, the compressor will turn on. The compressor, dehumidifier blower and HVAC system blower (if on) turns off when the RH of the air is 3% RH below the setting.

Tip: Set the dehumidifier %RH to the same value as the setting on the main system at the start, before making adjustments.

Application Sheet 2 — Single Zone Using iComfort Thermostat or Y6456 External Control

Parts Needed (additional parts may be required):

- iComfort S30 Thermostat Cat# 12U67 or iComfort Wi-Fi® Thermostat Cat# 10F81 or ComfortSense® 7500 Touch screen Thermostat Cat# 13H14 or Comfort Sense® 7000 Touch screen Thermostat Cat# Y2081
- Insulated duct
- Duct fittings & hardware
- Grilles (if required)
- Drain Pan and Float Switch (if required)
- Thermostat wire
- Y6456 Dehumidifier Control

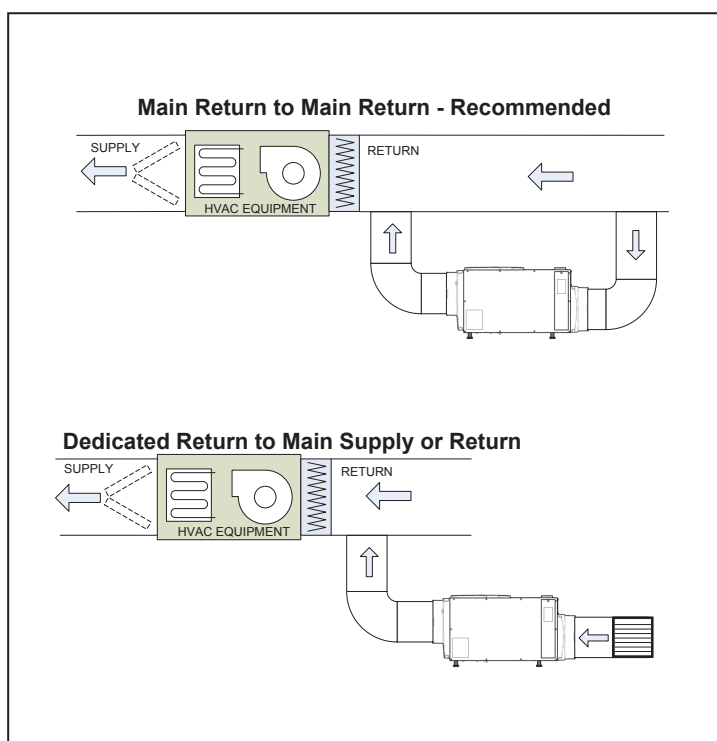


Figure 1 Dehumidifier Ducted to HVAC System

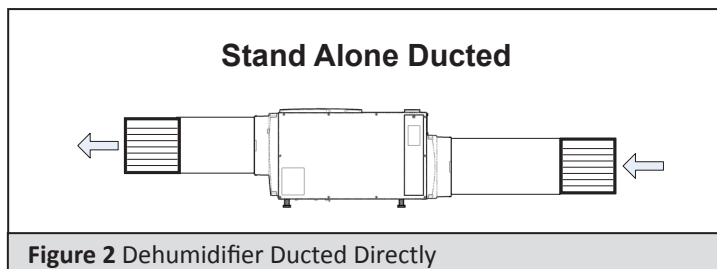
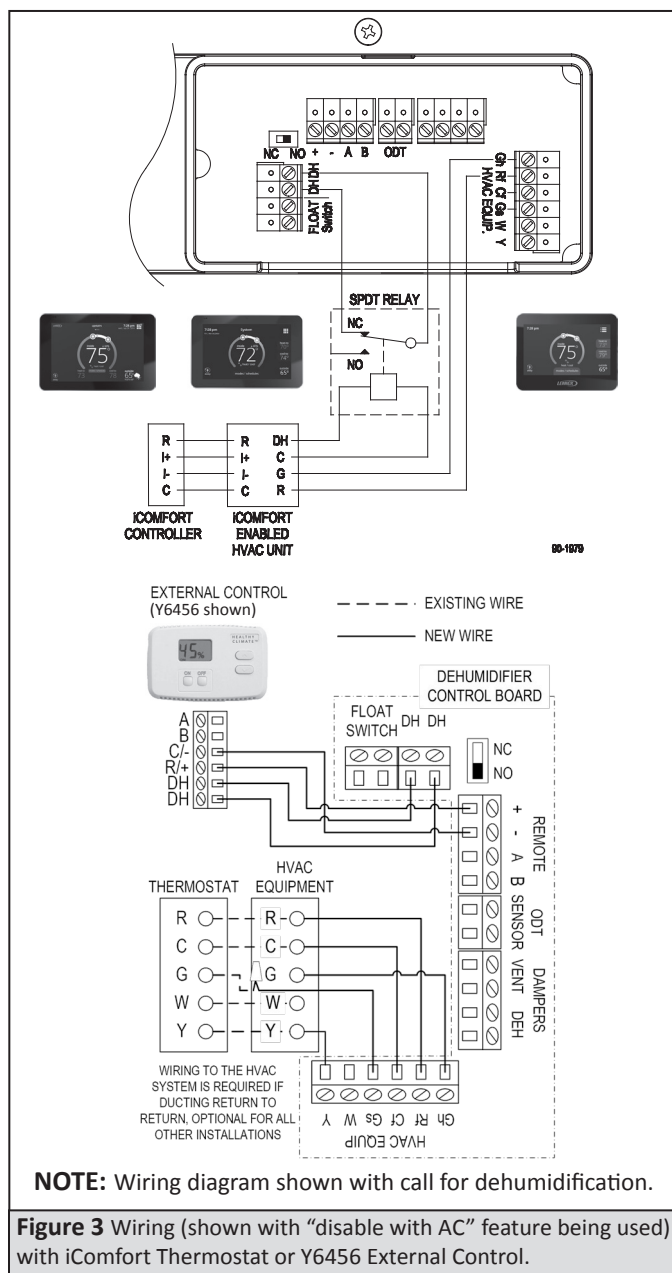


Figure 2 Dehumidifier Ducted Directly

Tip: Set the dehumidifier %RH to the same value as the setting on the main system at the start, before making adjustments.



External Control

The external control must have a normally open (NO) or normally closed (NC) dry contact output, and must be installed in the space that is going to be dehumidified. Select the type of control using the NO/ NC dip switch on the dehumidifier control.

Sequence of Operation

When the external control calls for dehumidification, the dehumidifier blower the HVAC blower (if this option has been wired – see **Figure 3**) turn on, then three seconds later the compressor turns on. All will turn off when the external control stops calling for dehumidification.

Application Sheet 3 — Remote Control Using Y6456 Control

Parts Needed (additional parts may be required):

- ___ Y6456 Dehumidifier Control
- ___ Insulated duct
- ___ Thermostat wire
- ___ Duct fittings & hardware
- ___ Grilles (if required)
- ___ Drain pan and float switch (if required)

Dedicated Return to Dedicated Supply

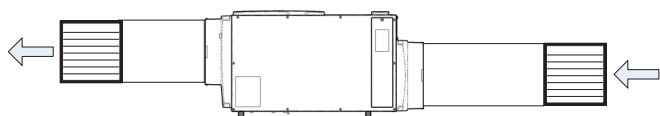


Figure 1 Dehumidifier Ducted Directly

Set Up the Dehumidifier for Remote Control

After wiring the Y6456 to the dehumidifier as shown, use the power switch located on the outlet panel of the dehumidifier to power up the dehumidifier. The dehumidifier control should display “OFF”.

1. Enter the Installer Set-Up menu by pressing and holding the “Mode” button on the dehumidifier control for 3 seconds; “REMOTE DISABLED” will appear on the display.
2. Press the Up or Down button to select “REMOTE ENABLED”.
3. Press the Mode button again to complete set up (“DONE” will appear on the display).

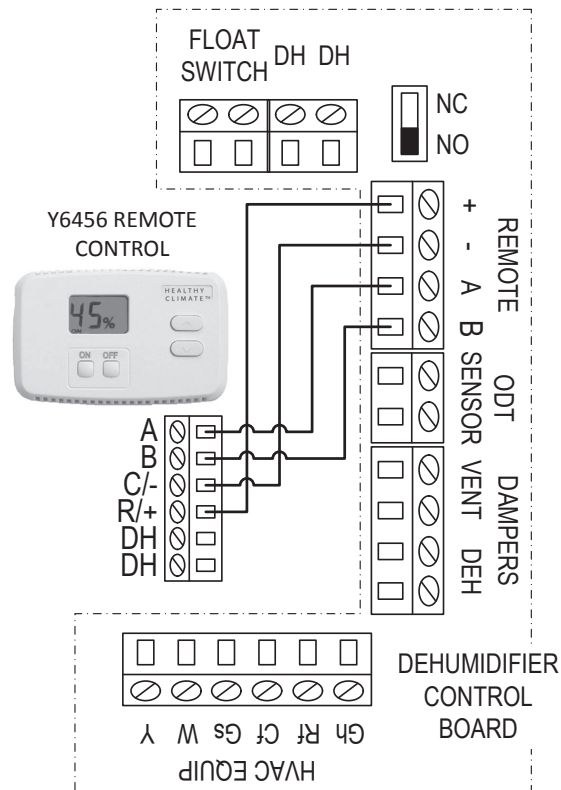


Figure 2 Wiring the Control

Sequence of Operation

The Y6456 Dehumidifier Control can be installed in any convenient location within the living space while the dehumidifier is installed in the space that is going to be dehumidified such as a crawl space, attic or basement. The relative humidity (RH) displayed on the Y6456 is the RH in the space where the dehumidifier is located – the dehumidifier communicates this to the Y6456. Changes to the dew point setting (1 – less dry, 7 – more dry) are made at the Y6456 and communicated to the dehumidifier. The dehumidifier can be turned on and off using the ON/OFF buttons of the Y6456.

Once every hour the dehumidifier will turn on its blower and sample the air in the zone to be dehumidified (sampling will also occur whenever the dew point setting is raised). If the dew point of the air is higher than the setting on the control, the dehumidifier compressor will turn on. When the dew point of the air is below the setting on the Y6456 Control, the dehumidifier will turn off.

When the Y6456 Control is wired to the dehumidifier in this application and after completing the set up (see Set Up the Dehumidifier for Remote Control above), “REMOTE” will appear on the display of the dehumidifier control.

Application Sheet 4 — Two Zone Using Internal Control

Parts Needed (additional parts may be required):

- Insulated duct
- Thermostat wire
- Duct fittings & hardware
- Drain pan and float switch (if required)
- Grilles
- Y6451 Zone Kit includes:
2 – 10" dia N.O. dampers,
2 – 10" dia N.C. dampers and
one 40VA, 24VAC plug-in
transformer

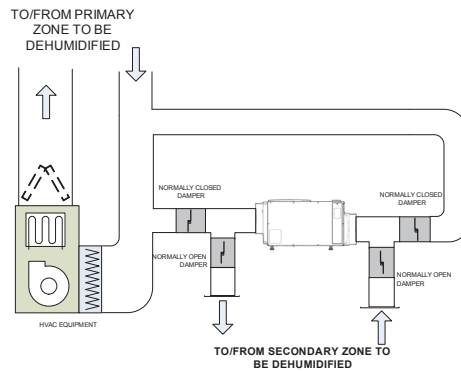


Figure 1 Duct/Damper Layout with Whole House as Primary Zone

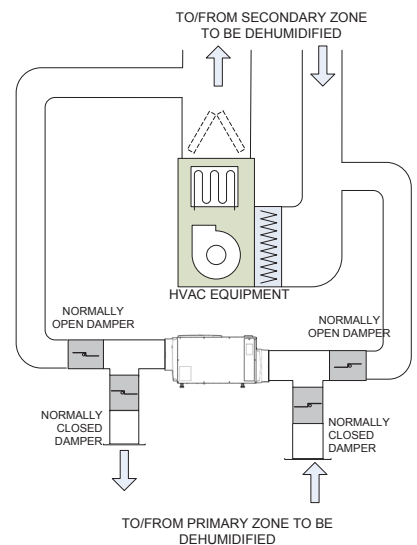


Figure 2 Duct/Damper Layout with Basement as Primary Zone

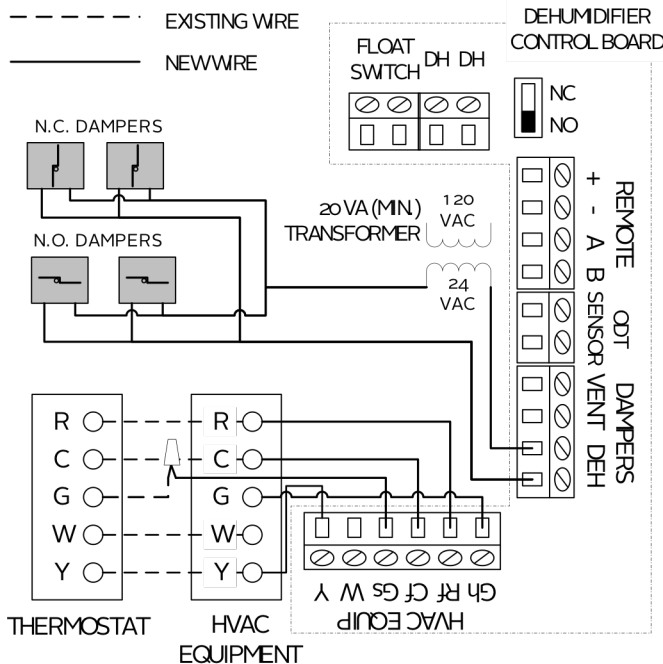


Figure 3 Wiring

Sequence of Operation

Adjust the relative humidity (RH) setting on the dehumidifier control; this will be the setting for both the Primary and Secondary Zone. Once an hour, the dehumidifier will “sample” the air in the Primary Zone. If there is no need for dehumidification in the Primary Zone the dehumidifier will then sample the air in the Secondary Zone.

When sampling in the Primary Zone the dehumidifier will energize the dampers and then turn on its blower (and the HVAC System blower if wired as shown in **Figure 3**), to measure the RH of the air. If the RH of the air is above the setting, the compressor will turn on. If the Primary Zone does **not** need dehumidification, the dampers are de-energized and the HVAC System Blower (if on) is turned off while the dehumidifier blower continues to run to sample the air in the Secondary Zone. If the RH of the air in the Secondary Zone is above the setting, the compressor will turn on.

Set Up the Dehumidifier for Zoning

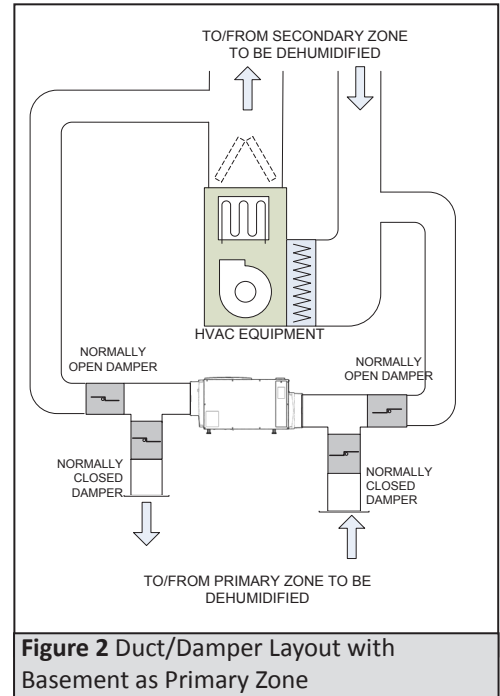
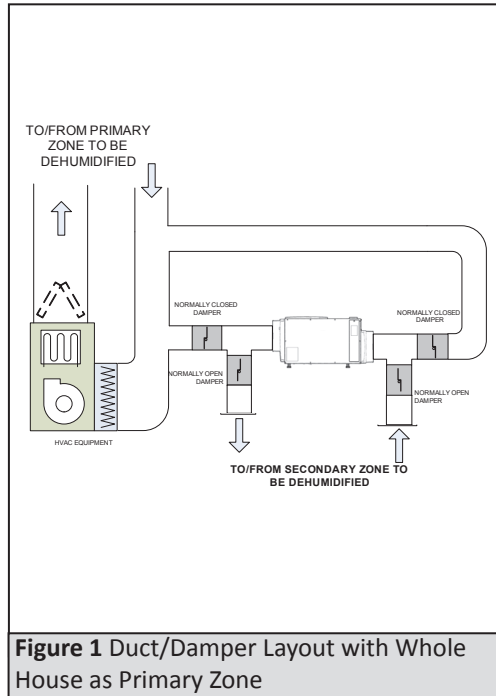
1. With “OFF” showing on the control, press the Mode button for 3 seconds to enter the Installer Set Up menu
2. Press the Mode button until “ZONE DISABLED” appears.
3. Press the Up or Down button to change to “ZONE ENABLED”.
4. Press the Mode button repeatedly until “DONE” shows on the display.

Energy Saving Tip: Select the mode to disable “DEH w/ AC”. This will allow the AC unit to dehumidify the whole house first, and if it is unable to satisfy the demand, the dehumidifier will then run to satisfy the remaining dehumidification need.

Application Sheet 5 — Two Zone with External Control in Primary Zone

Parts Needed (additional parts may be required):

- Compatible thermostats:
 - iComfort E30 (15S64),
 - iComfort M30 (15Z69),
 - iComfort S30 (12U67 and Comfortsense 7500 (13H14))
- Insulated duct
- Thermostat wire
- Duct fittings & hardware
- Drain pan and float switch (if required)
- Grilles
- Y6451 Zone Kit includes:
 - 2 — 10" dia N.O. dampers,
 - 2 — 10" dia N.C. dampers and one 40VA, 24VAC plug-in transformer



Sequence of Operation

The external control (i.e. iComfort Thermostat or Y6456 provides on--demand control of the dehumidifier for the Primary Zone. When the Primary Zone calls for dehumidification, the dehumidifier energizes the dampers, and turns on its blower and compressor. The dehumidifier will also turn on the HVAC System Blower if wired as shown in **Figure 3**). The Primary Zone demand will override an existing Secondary Zone demand.

The Secondary Zone is controlled by the relative humidity (RH) setting at the dehumidifier control. Once an hour, or immediately after dehumidifying the primary zone, the dehumidifier will “sample” the air in the Secondary Zone. When sampling, the dampers are not energized while the dehumidifier blower runs and the RH is measured. If the RH is above the setting on the control, the compressor will turn on and the Secondary Zone will be dehumidified.

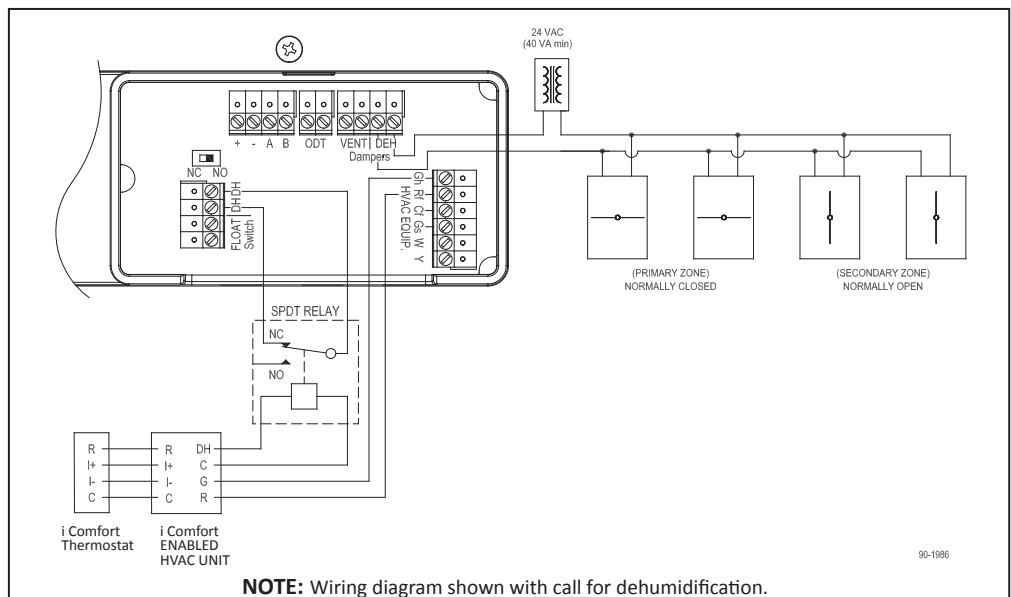


Figure 3 Wiring

Set Up the Dehumidifier for Zoning and External Control

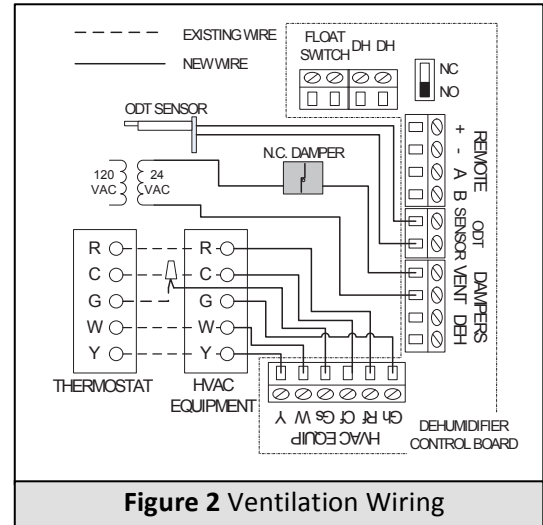
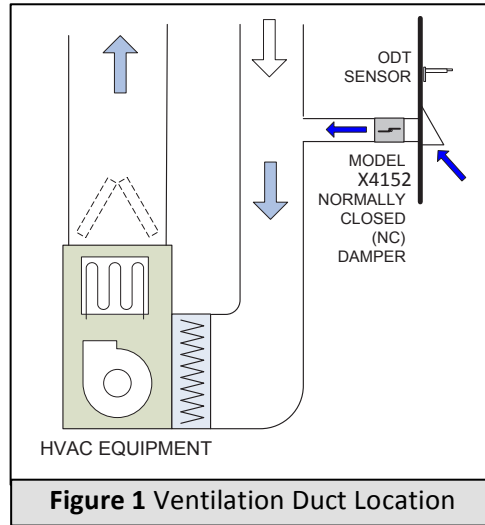
1. Press the Mode button for 3 seconds to enter the Installer Set Up menu
2. Press the Mode button until “ZONE DISABLED” appears.
3. Press the Up or Down button to change to “ZONE ENABLED”.
4. Press the Mode button again to show “EXTERNAL DISABLED”
5. Press the Up or Down button to change to “EXTERNAL ENABLED”
6. Press the Mode button repeatedly until “DONE” shows on the display.

Energy Saving Tip: Select the mode to disable “DEH w/ AC”. This will allow the AC unit to dehumidify the whole house first, and if it is unable to satisfy the demand, the dehumidifier will then run to satisfy the remaining dehumidification need.

Application Sheet 6 — Using the Ventilation Feature of the Dehumidifier

Parts needed for ventilation:

- Catalog # X4152
- Catalog # 58N66 Outdoor Temperature Sensor (optional)
- Catalog # 22N03 10VA Transformer
- 6" Insulated Duct, fittings and hardware
- Intake Hood
- Thermostat wire

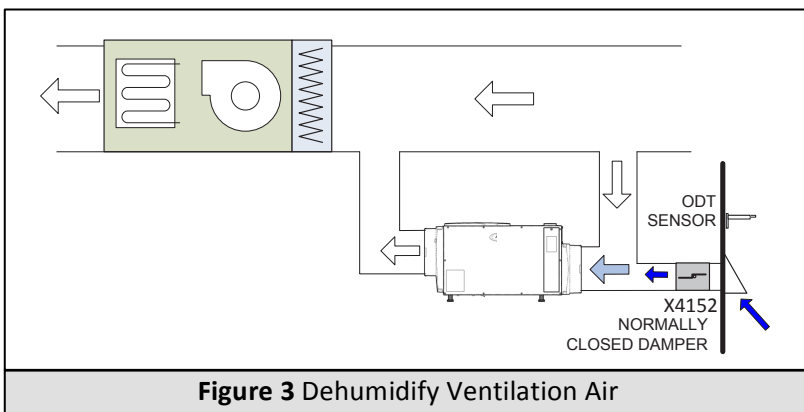


Install a ventilation duct with a normally closed Catalog # X4152 damper to the return duct of the HVAC system (see **Figure 1**) and wire the dehumidifier to the HVAC system as shown in **Figure 2**. The outdoor temperature (ODT) sensor is used to limit ventilation if the outdoor temperature gets too hot or too cold (see Set Up the Dehumidifier for Ventilation below). To prevent cold air discharge temperatures and to meet furnace application requirements, Modes AUTO-B or AUTO-D are recommended. Follow the set up instructions below and set the number of minutes per hour that ventilation will be needed (refer to the Installation Manual for details on determining how much ventilation is needed). Whenever the heating or cooling turns on, or when the dehumidifier turns on, the dehumidifier will open the damper and bring in fresh outdoor air. If the equipment doesn't run for the set number of minutes, the dehumidifier will turn on HVAC fan at the end of the hour to ensure ventilation needs are met.

Set Up the Dehumidifier for Ventilation

1. With "OFF" showing on the control, press the Mode button for 3 seconds to enter the Installer Set Up menu.
2. Press the Mode button until "VENT DISABLED" appears.
3. Press the Up or Down button to change to "VENT ENABLED".
4. Press the Mode button and "VENT TIMED" will be displayed. Press the Up or Down button to toggle between:
 - TIMED:** no temperature limits
 - AUTO – B:** Ventilation not allowed if ODT > 100°F or ODT < 0°F; allowed only when heating if 0°F < ODT < 20°.
 - AUTO – C:** Ventilation not allowed if ODT > 100°F or ODT < 0°F
 - AUTO – D:** Ventilation not allowed if ODT > 90°F; allowed only when heating if 0°F < ODT < 40°F
5. Press the Mode button, then use the Up and Down buttons to set the Vent Time (minutes/hour).
6. Press Mode repeatedly until "DONE" appears on the display.

Using the Dehumidifier to Pre-Condition the Ventilation Air



The dehumidifier can be used to remove moisture from the ventilation air **before** it is delivered to the home. Install the ventilation duct to the dehumidifier inlet duct as shown in **Figure 3**. The control on the dehumidifier must be used for the Primary Zone (i.e. an external control cannot be used) in this installation. If the RH of the incoming air is above the setting on the control the air will be dehumidified.

