

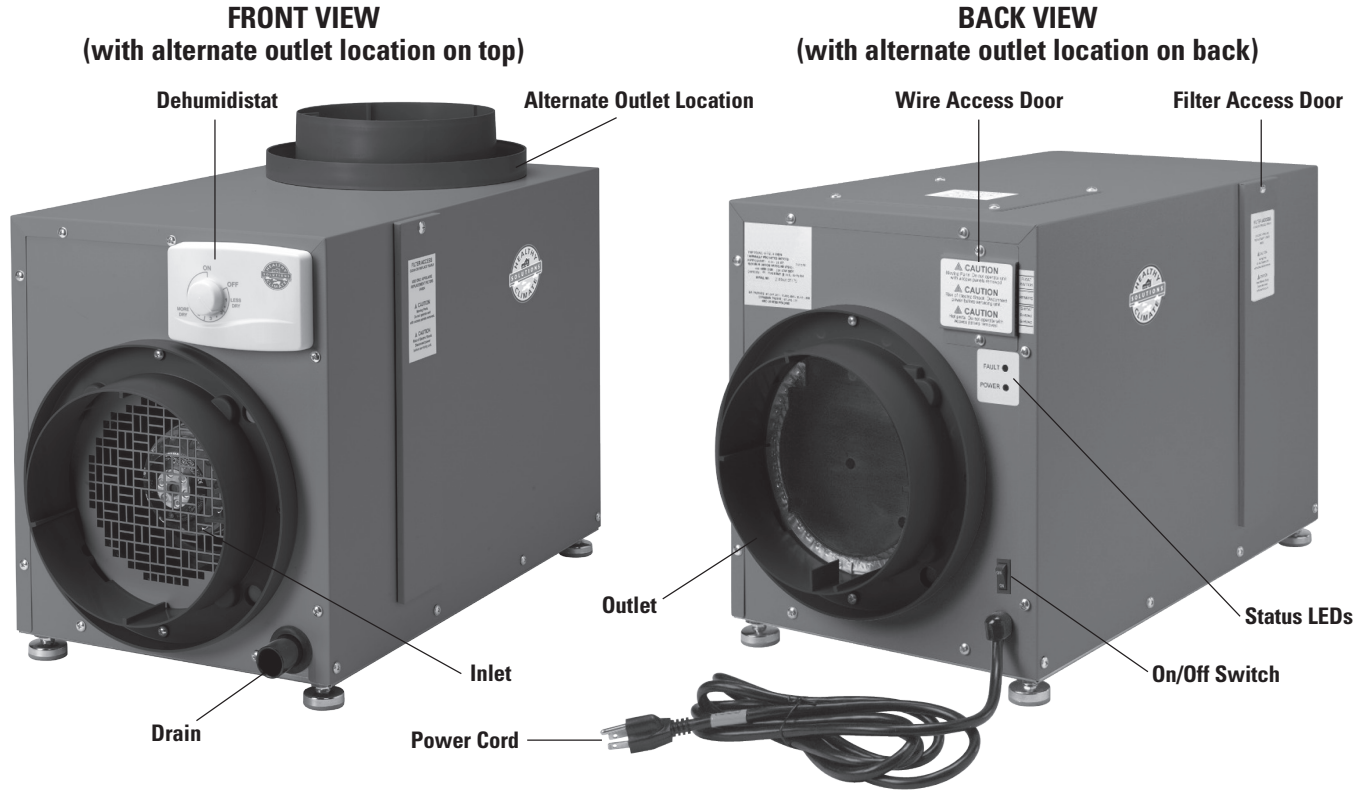


DEHUMIDIFIERS

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04/2012

HEALTHY CLIMATE® WHOLE HOME DEHUMIDIFIER

INSTALLATION INSTRUCTIONS FOR HEALTHY CLIMATE WHOLE HOME DEHUMIDIFIER MODEL HCWH-065 (Y3013)



⚠ WARNING

1. Improper installation may cause property damage or injury. Installation, service, and maintenance must be performed by a qualified service technician.
2. 120 Volts may cause serious injury from electric shock. Disconnect electrical power before starting installation or servicing. Leave power disconnected until installation/service is completed.
3. Sharp edges may cause serious injury from cuts. Use care when cutting plenum openings and handling ductwork.
4. Dropping may cause personal injury or equipment damage. Use tools or two people to transport dehumidifier.
5. Do not remove the outlet screen. The screen is required to protect from moving parts and electrical components.

⚠ CAUTION

1. Read all instructions before beginning installation.
2. Do not use in pool applications. Pool chemicals can damage the dehumidifier.
3. Do not use solvents or cleaners on or near the circuit board. Chemicals can damage circuit board components.
4. Wait 24 hours before running if the unit has not been shipped or stored in the upright position.

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Overview

The Whole Home Dehumidifier is designed to control humidity throughout the home. It can also be configured to control humidity in basements, crawl spaces and attics or other areas within the home (for more detail refer to the Mechanical Installation section). The dehumidifier can be wired to activate the HVAC blower during dehumidification, providing better circulation and balancing of indoor air conditions.

The dehumidifier is equipped with a dehumidistat which continually measures the humidity of the air in which it is located and controls to the dryness level set on the dial. The dehumidistat can remain mounted on the unit or can be removed and mounted in a living space.

DANGER

Risk of Carbon Monoxide Poisoning and/or Explosion.

Can cause injury or death.

Negative pressure can cause back-drafting of combustion gases in other household appliances such as Gas Furnaces, Oil Furnaces, Hot Water Heaters, Wood Stoves, Fireplaces, etc.

Combustion and flue gases from heating appliances must never be allowed to enter return air or living spaces. Seal all duct connections with joint tape and check for leaks. A balanced and sealed system will prevent negative pressure.

All access panels/doors must be properly installed during system/unit operation. Never use access doors/panels as a return air inlet.

Never connect a return or supply duct to other heating devices such as fireplaces or wood stoves.

Location Notes

1. **Install Unit Indoors:** Do not expose to elements.
2. **Drain Accessibility:** If a drain is not located in the installation area, a condensate pump may be required.
3. **Power:** Outlet within 8 feet of unit.

IMPORTANT

Installation must conform to all applicable codes.

For the HCWH-065, a dedicated 15 Amp circuit is recommended but not required for proper operation of the dehumidifier. If a dedicated circuit is not available, use a lightly loaded circuit. Do not use an extension cord.

For protection of the compressor, unit must be transported and installed in an upright position. If the unit was shipped or stored on its side, a 24 hour settling period is required before running the unit.

Specifications

Dimensions: Width: 12.5" cabinet, 13" with doors
Height: 14.5" cabinet, 18.5" with leveling feet fully extended
Length: 22" cabinet, 27" with collars

Weight: 65 lbs.

Capacity: 65 pints/day @ 150 cfm
AHAM DH-1-2003 80°F, 60% RH conditions

Efficiency: 1.8 Liters per kilowatt hour
AHAM DH-1-2003 80°F, 60% RH conditions

Power: 115VAC, 60 Hz, 8A Operating Current
Unit equipped with 8 ft. grounded power cord
15 Amp circuit required

Airflow:

ΔP ("w.c.)	Airflow (cfm)
0	230
0.25	190
0.50	150

Inlet Air Operating Conditions: 60°F to 95°F, 30% RH to 99% RH

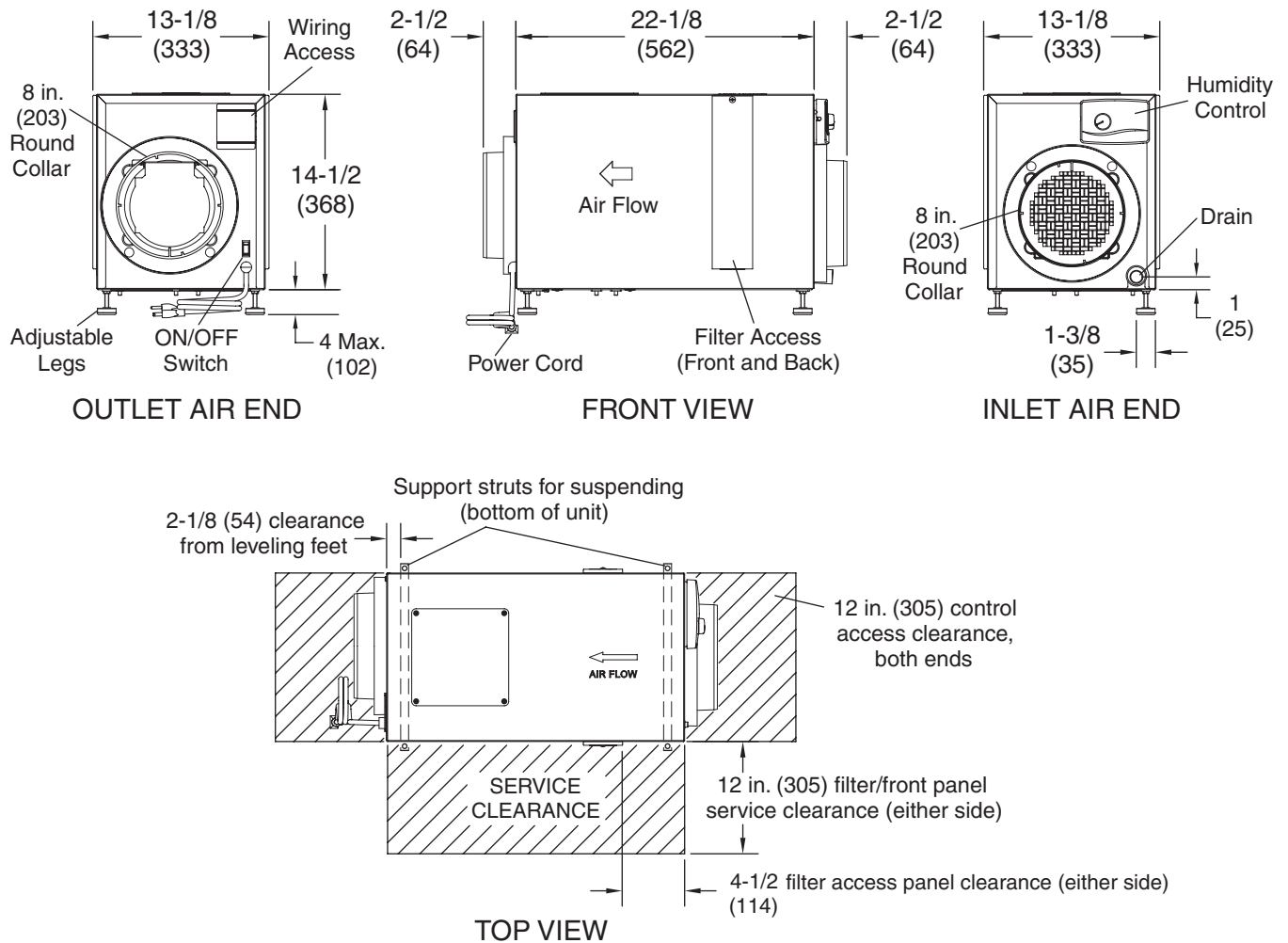
Installation Conditions: 40°F to 140°F, 0% RH to 99% RH

Evaporator Frost Sensor: 25°F +/- 5°F, circuit opens (cut-out)
55°F +/- 5°F, reset temperature (cut-in)

Filter: MERV 8, washable

Dimensions and Clearances

Figure 1



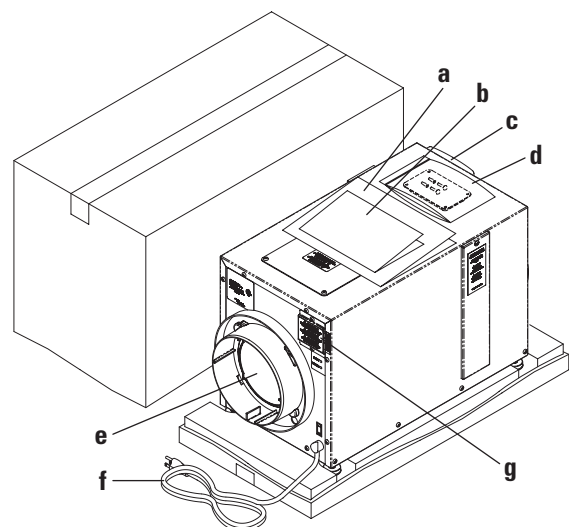
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Unpacking and Contents

Do not tip unit to remove from carton.

1. Open carton completely using cut line shown along bottom perimeter of carton.
2. Remove all cardboard inner pack (top edges and duct collars).
3. See **Figure 2** for opening view and contents.
 - a. Installation Manual
 - b. Owner's Manual
 - c. Dehumidistat (mounted to inlet panel)
 - d. Bag with Dehumidistat Cover Plate, Screws (2), Anchors (2)
 - e. Outlet with Back Flow Damper
 - f. 8 ft. Grounded Power Cord
 - g. Wiring Access Panel

Figure 2 – Carton Opening & Contents



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Installation Components

See specific set-up configurations for details.

Required

Drain Line
Condensate Pan & Float Switch

Optional

Wire (18-22 awg)
8" Duct (Flex or Rigid)

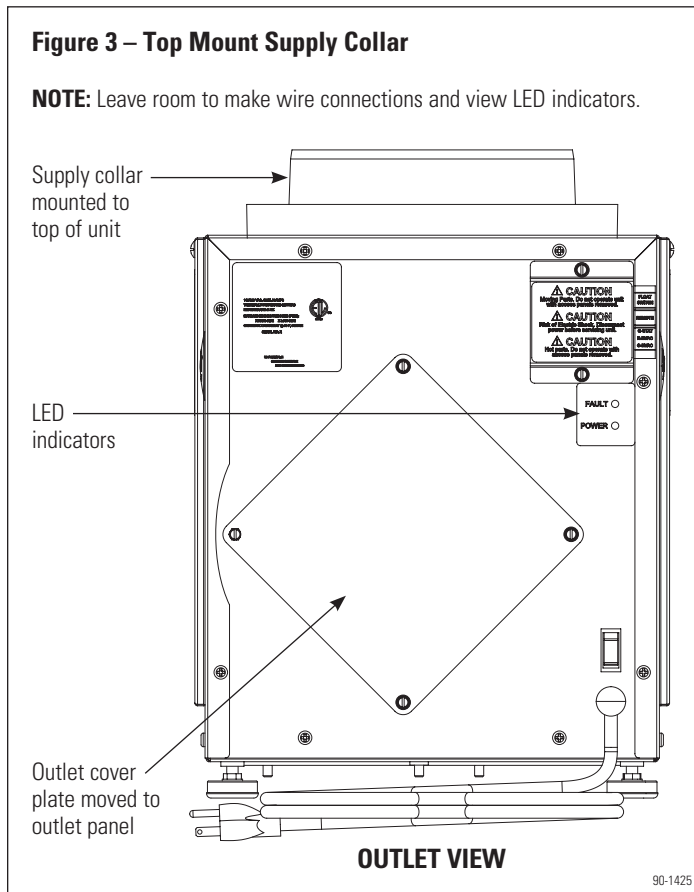
Set-Up

Supply Collar

The dehumidifier can be installed as shipped, with the supply collar on the outlet panel, or if space is restricted, the supply collar can be relocated to the top of the unit.

Top Mount Supply Collar (Figure 3)

1. Remove the four screws securing the supply collar (with backflow damper) and screen to the outlet panel.
2. Remove the four screws securing the top-mounted outlet cover plate.
3. Attach screen and supply collar with damper to the top of the unit.
4. Attach outlet cover plate to the outlet panel.



Dehumidistat Location

The dehumidistat mounted to the dehumidifier can remain on the unit or be removed and mounted in the living space. **Attic installations require that the dehumidistat be moved to the living space.** Note: Any dry contact, normally open humidity control can be used as the controlling device for the dehumidifier.

If using a normally open control other than the one provided, remove the dehumidistat as described in steps 1-6 in the **WIRING, Dehumidistat Wall Mount Installation** section. Follow steps 7-10 to wire an alternate control.

If wiring to an iComfort System, remove the dehumidistat as described in steps 1-8 in the **WIRING, Dehumidistat Wall Mount Installation** section. See **WIRING, iComfort System Installation** section.

Wall Mount Location

- Mount approximately 5 feet above the floor on an inside wall of the living space.
- Do not locate dehumidistat in the direct path of drafts from open doors and windows.
- Do not install where operation might be affected by lamps, outside sources of humidity (i.e. shower), fireplace, registers, or radiators.

Mechanical Installation

Drain

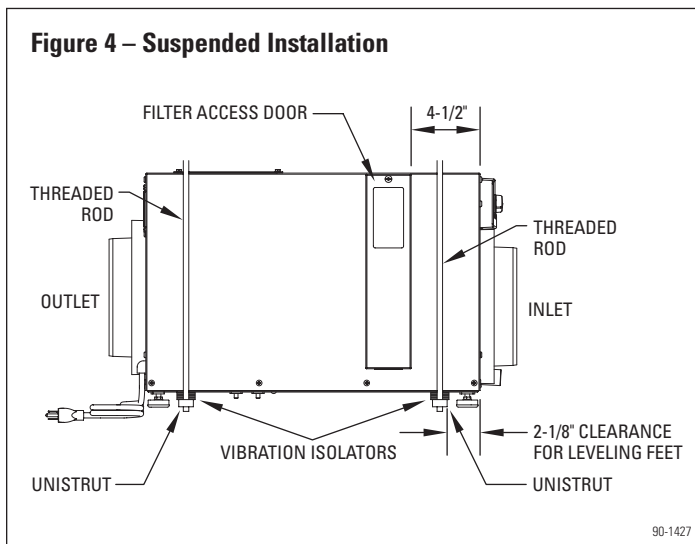
Run vinyl or PVC tubing from the 3/4" drain outlet on the dehumidifier inlet to a floor drain. Make sure the drain line has a constant downward slope and is not kinked. Refer to local codes to determine if a p-trap is required. In attic installations a drain pan with float switch is required. See **Float Switch** section for wiring instructions.

CAUTION

An auxiliary drain pan with float switch is required in attic installations or in areas where water overflow may damage the structure.

Suspended Installation

If hanging the unit, use 1/4" threaded rod and two unistruts to support the base just inside the leveling feet. It is recommended that vibration isolators be placed between the unistruts and dehumidifier base. See **Figure 4**. Do not position threaded rods over filter access doors. There must be a minimum clearance of 12" on one side of the unit to allow for removal of the filter.



Ducting

The dehumidifier is supplied with two 8" round collars. An integral backflow damper is installed in the outlet collar. In a ducted installation, the dehumidifier pulls air from the living space or HVAC return duct and supplies the dehumidified air back to the HVAC return duct, and is the preferred installation. (See **Figures 5 & 8**.) This installation must include wiring the dehumidifier to activate the HVAC blower during dehumidification. (See **Wiring to HVAC System** in **WIRING** section.) Activating the HVAC fan during dehumidification is recommended because it offers better circulation and balancing of indoor air conditions, and reduces moisture on the HVAC coil.

Ducted Installation

- Move supply collar to the desired location, if necessary. (See **Supply Collar** in **SET-UP** section.)
- Use the least amount of ductwork possible. To ensure best performance, do not exceed a total of 50 feet of duct installed in accordance with SMACNA Standards. UL approved, 8" diameter, insulated duct is recommended for all connections.
- All joints and seams must be sealed.

⚠ CAUTION

Sharp edges hazard.
Equipment sharp edges can cause injuries.
Use protective gloves when grasping equipment edges.

Attic Installations

The **Preferred Installation** ensures warm, dehumidified air is thoroughly mixed with HVAC system air before being discharged into the living space. If adequate space exists between the supply plenum and the first branch, allowing for proper mixing with the HVAC system air, the dehumidifier discharge may be ducted to the supply side. The **Alternate Installation** minimizes re-evaporation of moisture off the cooling coil.

Attic installations require the dehumidifier to be installed in the supplied condensate pan with a field supplied float switch. Vibration isolators placed under the dehumidifier feet are recommended when the dehumidifier is installed on ceiling joists.

Figure 5 – Preferred Attic Installation

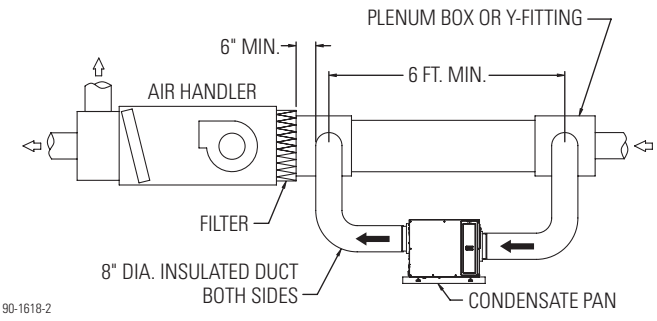
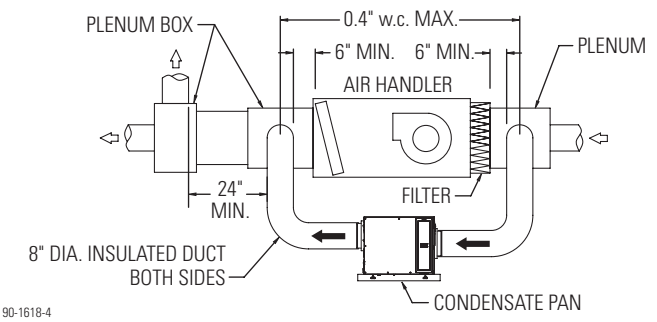
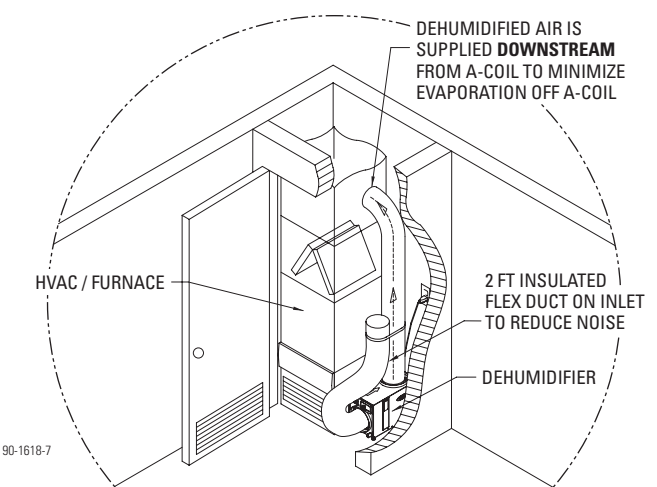


Figure 6 – Alternate Attic Installation



Closest Installation

Figure 7 – Closet Installation



⚠ CAUTION

Ensure return grill in door is not obstructed so dehumidifier does not pull from HVAC system.

Basement Installations

Figure 8 – Preferred Basement Installation

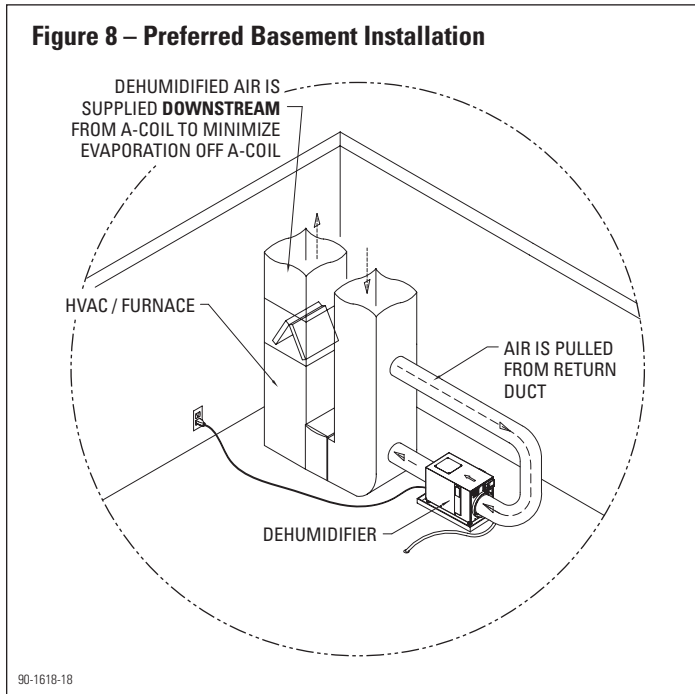
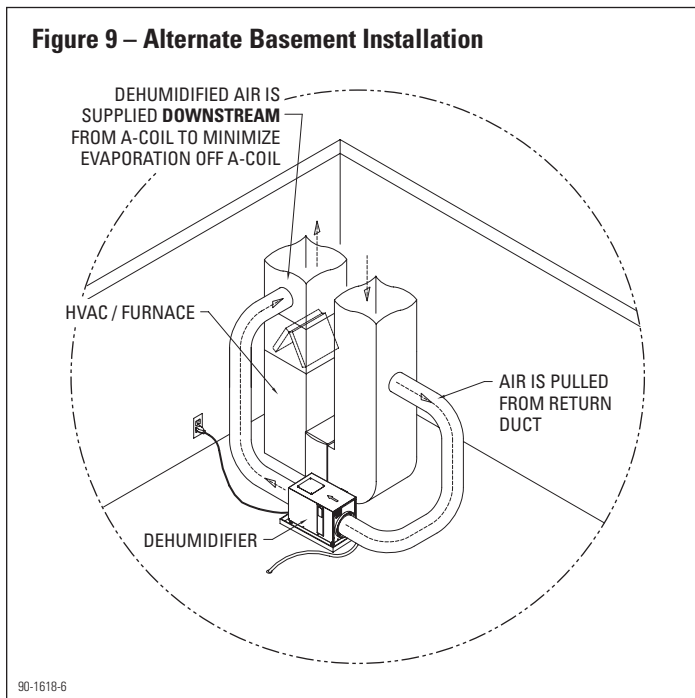


Figure 9 – Alternate Basement Installation



Basement Installation Note: The dehumidifier must be installed in an auxiliary drain pan with float switch.

Stand Alone Installations

In a free standing installation, the dehumidifier pulls air from the installed space and returns the dehumidified air back to that space. See **Figure 10**.

- Place unit in area with drain access and within 8' of an outlet.
- Unit can also be ducted to pull and return to a single living space. See **Figure 11**.

Figure 10 – Stand Alone, Non-Ducted

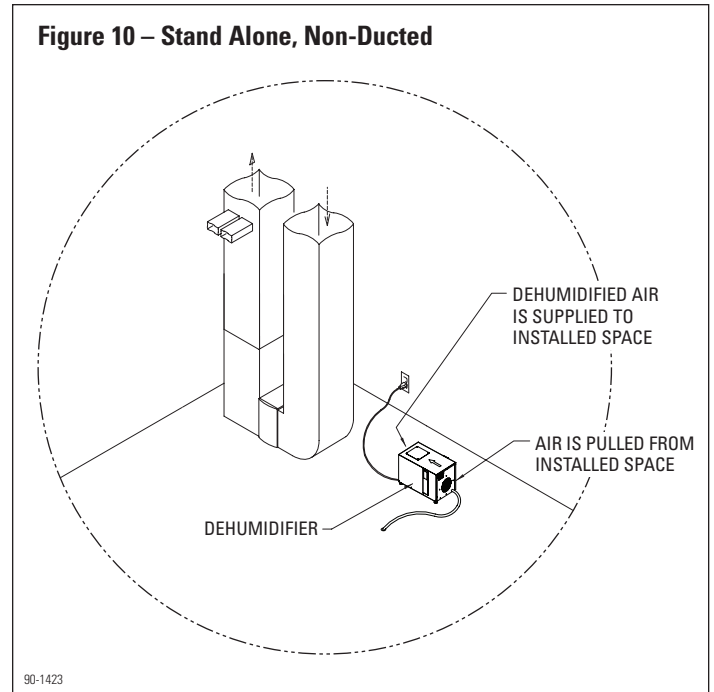
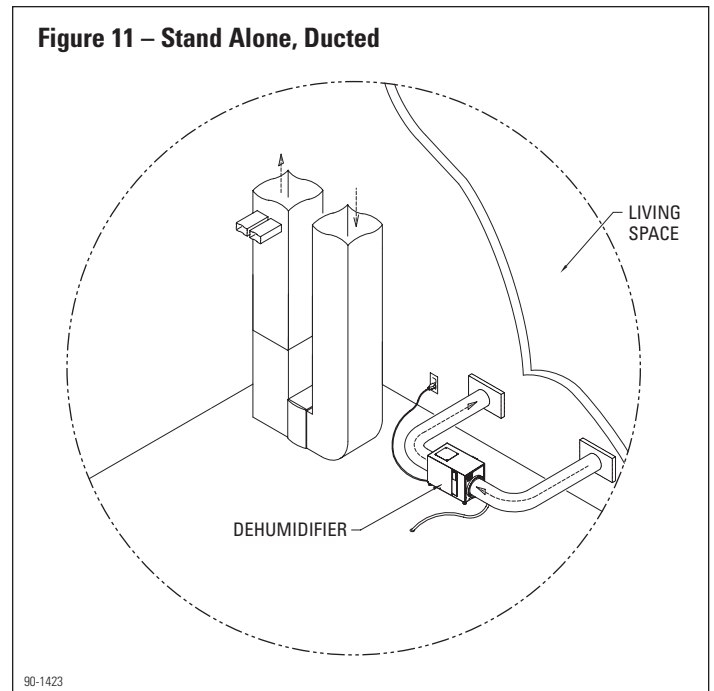
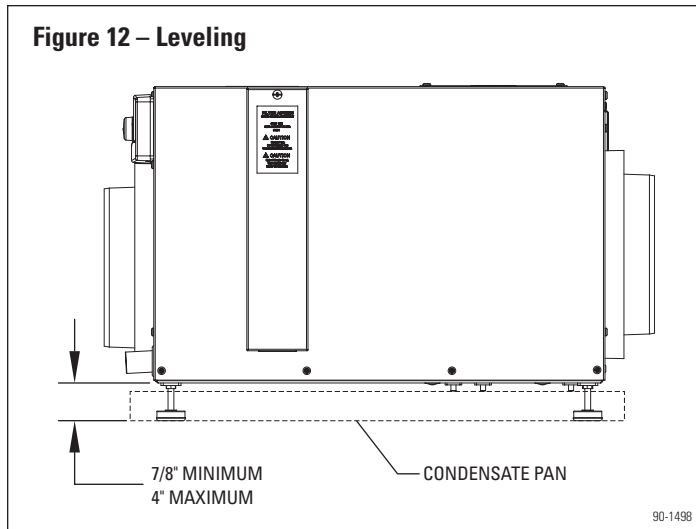


Figure 11 – Stand Alone, Ducted



Leveling

Adjust feet as required for leveling and proper drainage (see **Figure 12**).



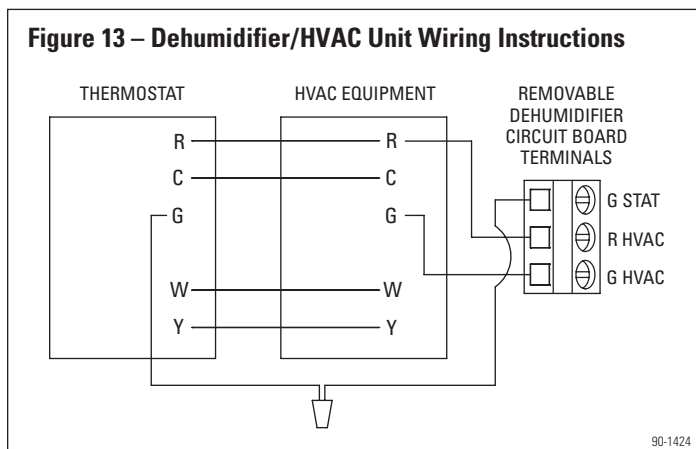
Wiring

Wiring to HVAC System

The dehumidifier can be wired to activate the HVAC blower during dehumidification. This is recommended because it offers better circulation and balancing of the indoor air conditions, and reduces moisture on the HVAC coil. Note: Running the HVAC blower during dehumidification does not affect moisture removal efficiency. If the unit is not wired to the HVAC system, air is pulled through the unit, dehumidified, and circulated solely by the dehumidifier blower.

HVAC Wiring Instructions

1. Disconnect power to the HVAC system using disconnect switch or fuse/breaker.
2. Unplug the dehumidifier.
3. Remove wiring access panel on the dehumidifier outlet panel.
4. Run a 3-wire cable from the dehumidifier to the furnace/air handler.
5. The G-STAT, R-HVAC, & G-HVAC terminal can be removed from the circuit board for ease of wiring. Unplug the terminal and make the connection shown in **Figure 13**.
6. Plug terminals back into circuit board.
7. Replace the wiring access panel when wiring is complete.



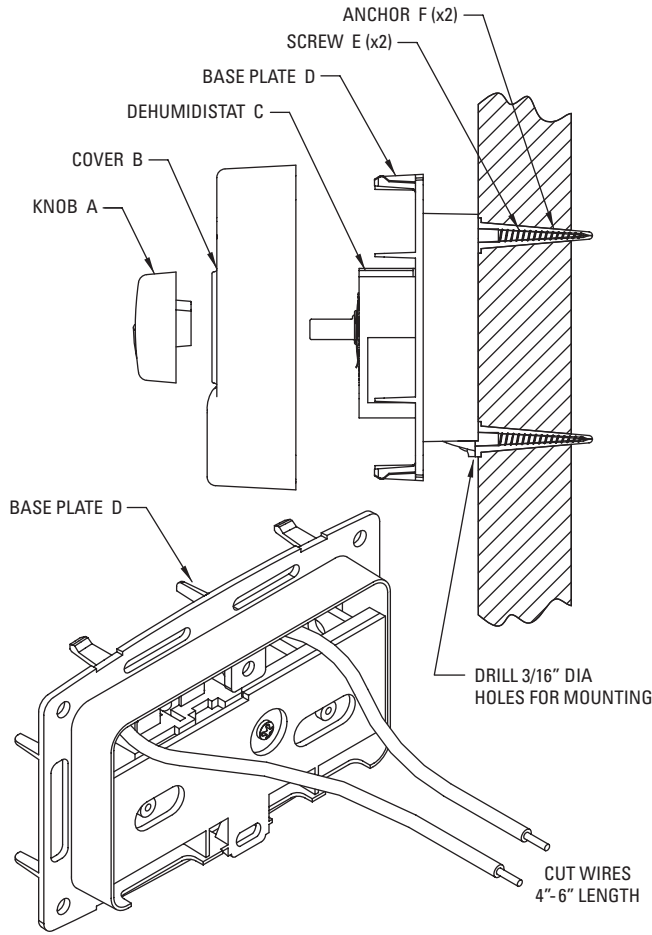
Dehumidistat Wall Mount Installation (Figure 14)

1. Gently pull knob (A) from the dehumidistat cover (B). The cover is held in place by snap clips. Remove the cover by pulling carefully. Do not touch the sensing element on the dehumidistat (C).
2. Remove 4 screws in base plate (D) and save for attaching the provided cover plate in place of the dehumidistat.
3. Pull dehumidistat off unit until 4" - 6" of wire is outside of unit.
4. Cut wires and use tape to secure leads to inside of unit, preventing contact with blower.
5. Remove the gasket from the base plate. This will be used with the insulated cover plate installed in the next step.
6. Using the screws removed in Step 2, install the provided insulated cover plate with gasket over the dehumidistat opening on the unit.
7. Remove the wiring access panel on unit outlet panel.
8. Unplug the REMOTE terminals from the circuit board, remove the two wires and cut off bare leads. Once cut, the wires may remain in the unit.
9. Run a 2-wire cable (18-22AWG) from the dehumidifier to the wall mount location.
10. Connect cable at the dehumidifier to the REMOTE terminals. Plug terminals into the circuit board and replace wiring access panel. See **Figure 15**.
11. Use the dehumidistat base as a template to mark mounting holes and wire access location on the wall.
12. Drill two 3/16" holes at mounting locations and a 3/8" hole at desired wire access location.
13. Pull 2-wire cable from the dehumidifier through the wire access opening in the wall.
14. Strip wire ends coming from the dehumidistat and dehumidifier and connect with small, field supplied wire nuts.
15. Push excess wire and wire nuts through the access hole in the wall. Use the supplied screws (E) and wall anchors (F) to attach the base plate (with dehumidistat) to the wall using the top centered hole and bottom centered slot.
16. Reassemble dehumidistat cover by snapping in place on base plate and press on knob.

iComfort System Installation

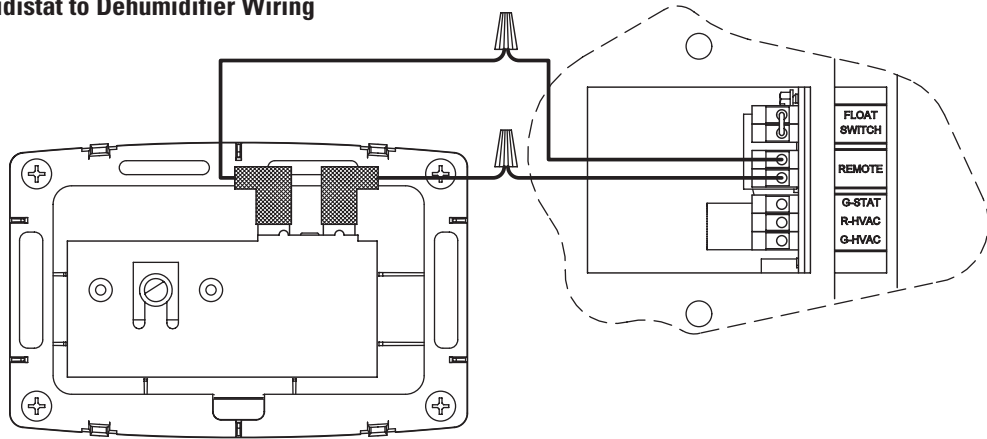
A Lennox control with a dehumidifier connection can be used as a dehumidifier control with the addition of an external relay. For operation with a Lennox control, make the connections shown in **Figure 16**.

Figure 14 – Wall Mount



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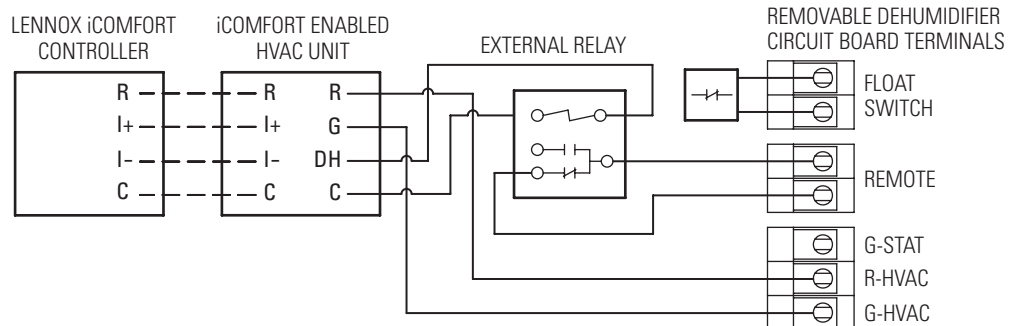
Figure 15 – Dehumidistat to Dehumidifier Wiring



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Figure 16 – Lennox Control to Dehumidifier Wiring

NOTE: Normally closed controllers are not recommended. If the controller loses power, is removed from the wall, or if the batteries fail, the dehumidifier would revert to continuous operation, which has the potential of leading to a water leak.



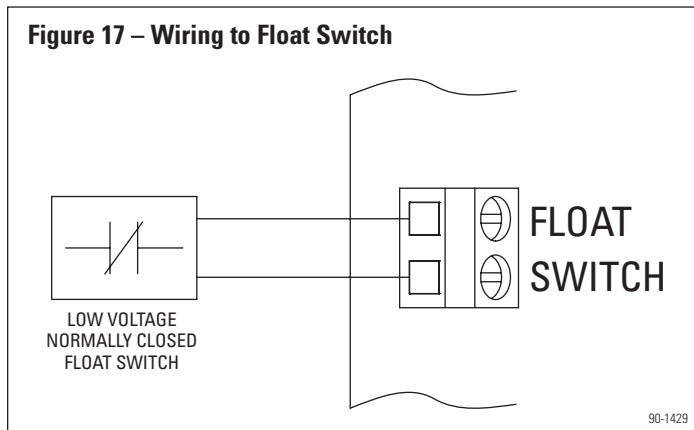
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Float Switch

If the dehumidifier is installed in an attic or an area requiring leak protection, the unit must be placed in a drain pan with a normally closed condensate overflow safety switch (float switch). The float switch should be wired to the FLOAT SWITCH terminals on the circuit board on the outlet panel (See **Figure 17**). The compressor is disabled when the float switch is open.

Wiring Instructions

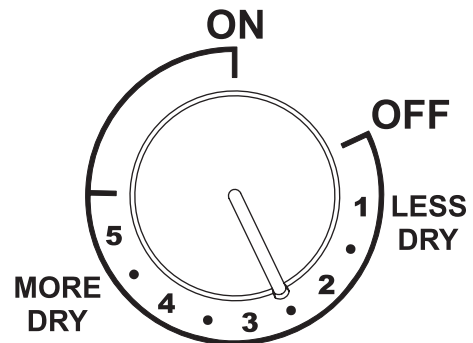
1. Remove wiring access panel on the outlet panel.
2. Unplug the FLOAT SWITCH terminals and remove the jumper.
3. Run a 2-wire cable from the dehumidifier to the float switch.
4. Wire float switch to FLOAT SWITCH terminals and plug the terminals back into circuit board (**Figure 17**).
5. Replace the wiring access panel.



Start Up/System Checkout

1. Check the wiring and restore power to the HVAC equipment (if applicable).
2. Plug in the dehumidifier and turn on/off switch ON.
3. Check LED indicators located below the wiring access panel. Verify the green LED is on. The green LED is on when power is applied to the system. See **Figure 3**.
4. Rotate the dehumidistat knob fully clockwise to ON position.
5. If set-up is correct, the dehumidifier blower, and HVAC fan (if applicable) will turn on. The compressor will turn on after the dehumidifier blower has run for 3 minutes. Refer to the **TROUBLESHOOTING GUIDE** if the dehumidifier blower and/or compressor do not activate.
6. Check LED indicators. Green should remain on. If Red LED is on, refer to the **TROUBLESHOOTING GUIDE**. The red LED turns on when a fault condition is active. Possible fault conditions include open float switch or open high temperature switch.
7. After verifying operation, rotate the dehumidistat knob counter-clockwise to set the dehumidifier to the desired dryness level. Start at 2-1/2 as the initial setpoint for economy, property protection and upper end of comfort range. Change dryness level up or down as desired for comfort or economy. This will vary depending on location and conditions. Moving the knob toward "MORE DRY" will increase the amount of time the dehumidifier runs, making conditions drier. Moving the knob toward "LESS DRY" reduces the amount of time the dehumidifier runs, allowing for higher humidity levels. See **Figure 18** for knob setpoint.

Figure 18 – Dehumidistat Setpoints



Service Parts List

Service Parts List	
Catalog Number	Part Description
Y3032	Air Filter
Y5028	Backflow Damper
Y5029	Impeller with Bracket
Y5030	Leveling Foot
Y5031	55 MF Capacitor for Compressor
Y5032	Control PCB Assembly
Y5033	High Temperature Cutout Switch
Y5034	Low Temperature Cutout Switch
Y5035	Outlet Screen
Y3066	Dehumidistat Control Assembly
Y3033	Filter Access Door Assembly
Y3064	Dehumidistat Hole Cover
Y3065	Outlet Cover Plate
Y3196	Condensate Pan

Sequence of Operation

The dehumidistat continually measures the humidity of the air in which it is located and controls to the dryness level set on the dial.

Humidity level rises above the dial setting on the dehumidistat.

- Dehumidifier blower turns on.
- DEH amber LED on the power board (not visible unless dehumidifier cover is removed) will illuminate.
- If wired to HVAC system, HVAC system blower and HVAC amber LED (not visible unless dehumidifier cover is removed) will turn on and illuminate.
- After 3 minutes of blower operation, the dehumidifier compressor and COMPR amber LED (not visible unless dehumidifier cover is removed) will turn on and illuminate. Note: To prevent short-cycling, the dehumidifier compressor will turn on 3 minutes after the blower.

Humidity level falls below the dial setting on the dehumidistat.

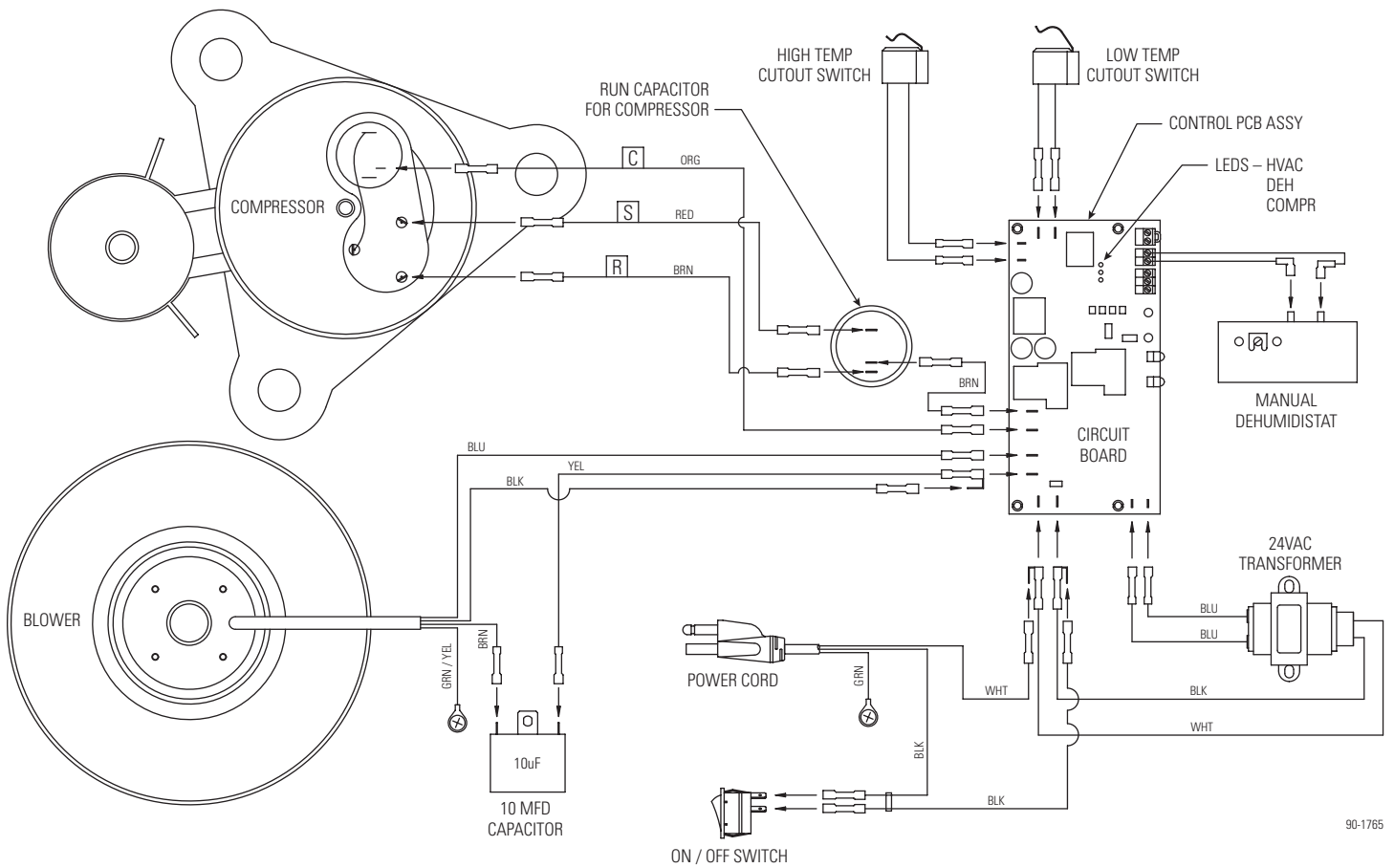
- Dehumidifier compressor turns off.
- Dehumidifier blower turns off.
- If wired to HVAC system, HVAC system blower turns off, unless the system thermostat keeps it running.

The dehumidifier is equipped with an automatic defrost feature. When the evaporator coil temperature drops below the cut-out point of the frost sensor, the dehumidifier begins the defrost cycle and the dehumidistat will turn off the compressor and the blower will continue to run. The compressor will remain off until the evaporator coil temperature rises above the cut-in point of the frost sensor.

Troubleshooting Guide

Symptom	Possible Reason/Troubleshooting Procedure
Red LED On Blower & compressor not running.	Open Float Switch <ul style="list-style-type: none"> • If float switch not installed, confirm jumper installed at FLOAT SWITCH terminals. • If float switch installed, confirm switch is not open. • Clear obstruction in drain pan/tubing.
Red LED On Blower is on but compressor not running.	High System Pressure/High Discharge Line Temperature Due to Lack of Airflow or Excessive Inlet Temperature <ul style="list-style-type: none"> • Check dehumidifier air filter and wash or replace. • Check for blocked ductwork and clear.
Dehumidifier blower is running but little or no airflow.	Pressure Drop Across Dehumidifier is Higher than 0.8" w.c. <ul style="list-style-type: none"> • Check dehumidifier air filter and wash or replace. • Check for blocked ductwork and clear. • Check if back flow damper is blocked or stuck and remove obstruction.
Blower is running but compressor is not.	Coil Frosting <ul style="list-style-type: none"> • Lack of or reduced airflow, check/clean filter. • Inlet air conditions too low (below 60°F), turn down dryness setting. Blower 3 Minute Minimum "ON" Time <ul style="list-style-type: none"> • Wait 3 minutes. Compressor will not start until blower has run for 3 minutes.
Dehumidifier is not draining properly.	Incorrect Drain Installation <ul style="list-style-type: none"> • Check drain line for continuous downward slope. • Verify there are no kinks, traps or debris in drain line. • If drain trap installed, confirm trap is properly installed, clear and primed. • Unit is not level, adjust feet.
The dehumidifier does not run.	No Power to Unit – Green LED Off (15 amp circuit required). <ul style="list-style-type: none"> • Check that the power switch on the dehumidifier is ON. • Check if circuit breaker has tripped. Dehumidistat is OFF <ul style="list-style-type: none"> • Turn on dehumidistat.
Dehumidifier is loud when operating.	Fan Noise <ul style="list-style-type: none"> • If inlet is not ducted to HVAC return, install approximately 2' of 8" flex duct on inlet collar. Vibration <ul style="list-style-type: none"> • Install vibration isolators under dehumidifier feet.
Dehumidifier is producing hot air.	The dehumidifier normally produces heated, dry air. Better mixing with the HVAC system air is needed. <ul style="list-style-type: none"> • Change ducting to allow for maximum mixing. See MECHANICAL INSTALLATION section. • Wire dehumidifier to the HVAC system.

Wiring Schematic



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