

⚠ WARNING

- 120 volts may cause serious injury from electric shock. Disconnect electrical power before starting installation. Leave power disconnected until installation is complete.
- Sharp edges may cause serious injury from cuts. Use care when cutting plenum openings and handling ductwork.
- Dropping may cause personal injury or equipment damage. Handle with care.
- Do not remove the inlet or outlet screen. Both screens are required to protect from moving parts and electrical components.

⚠ CAUTION

- Do not use in pool applications.
- If unit has been shipped or stored on its side, wait 24 hours before running.
- Do not use solvents or cleaners on or near the circuit board.

SPECIFICATIONS

Dimensions: Width: 12.5" cabinet, 13" with doors
Height: 14.5" cabinet, 17" with 2.5" leveling feet
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
Dedicated 15 Amp circuit recommended

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

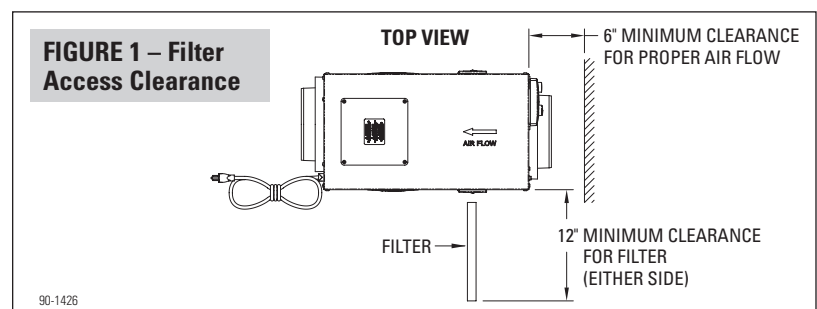
Evaporator Frost Sensor: 25°F +/- 5°F, circuit opens (cut-out)
55°F +/- 5°F, reset temperature (cut-in)

Filter: MERV 8, washable

Dehumidistat Control Accuracy: +/- 6%RH with +/-6% Differential

LOCATION CONSIDERATIONS

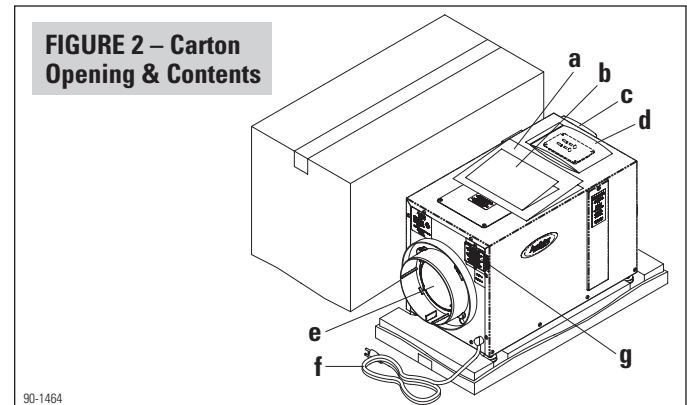
- Install Unit Indoors:** Do not expose to elements.
- Drain Accessibility:** If a drain is not located in the installation area, a condensate pump may be required.
- Power:** Dedicated outlet within 8 feet of unit.
- Filter Access:** Allow for 12" clearance on one side of the unit for removal of filter. (Figure 1)
- Inlet:** If inlet is not ducted, a minimum of 6" of open space is required from the inlet panel to an adjacent surface.



UNPACKING AND CONTENTS

Do not tip unit to remove from carton.

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



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 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.

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

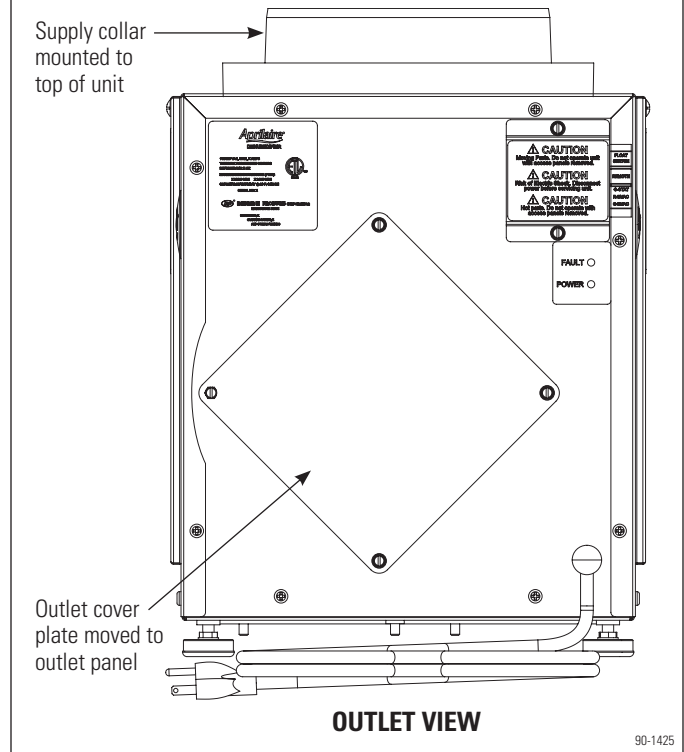
DRAIN

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.

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.

FIGURE 3 – Top Mount Supply Collar

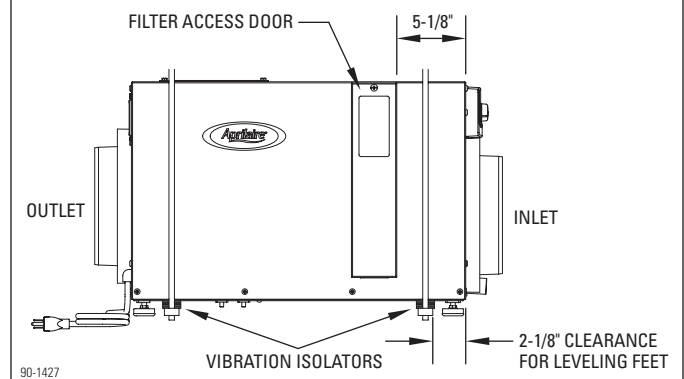


MECHANICAL INSTALLATION

DRAIN

SUSPENDED INSTALLATION

FIGURE 4 – Suspended Installation



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 to the HVAC supply duct (See **Figures 5, 6 & 7**).

DUCTED INSTALLATION

- Move supply collar to the desired location, if necessary. (See **Supply Collar** in **SET-UP** Section)
- The unit can be ducted to the supply or both the return and supply. The dehumidifier inlet ducting must be a minimum of 6" upstream of the HVAC system air cleaner and the outlet must be ducted a minimum of 6" downstream of the cooling coil.
- 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.

FIGURE 5 – Basement Installation

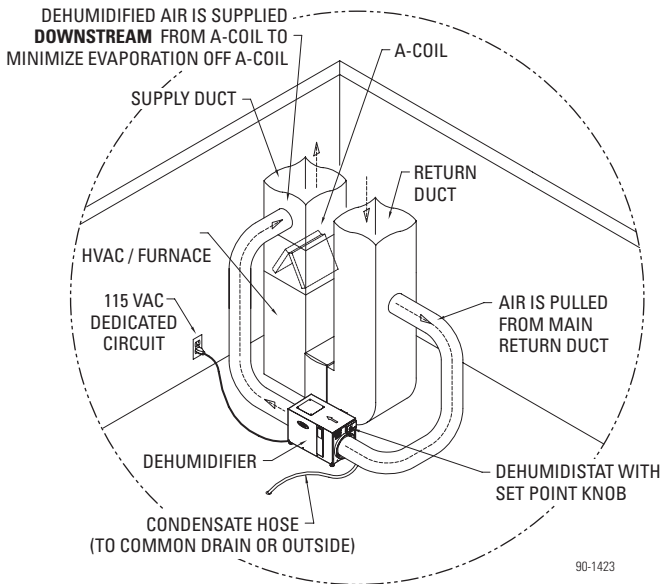


FIGURE 6 – Equipment Room/Closet Installation

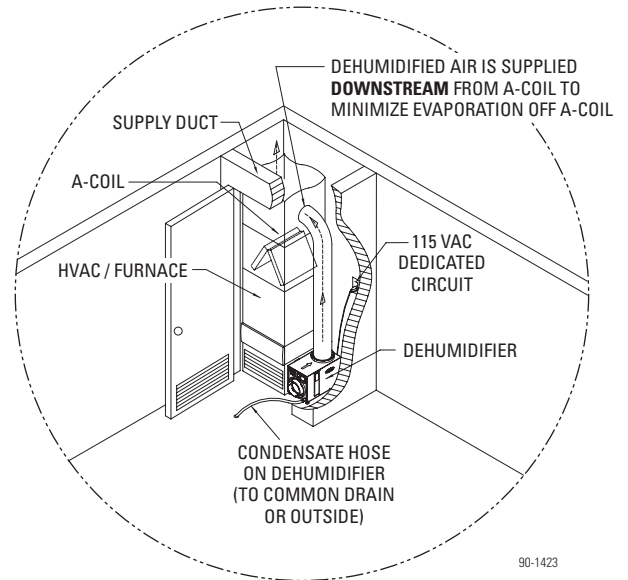
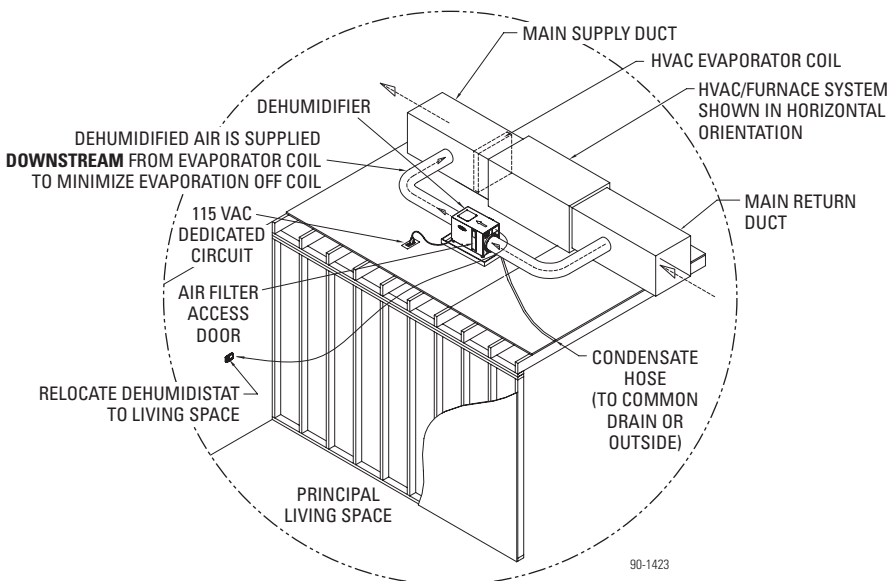


FIGURE 7 – Attic Installation



Note 1: Attic installations require the following.

1. The dehumidistat must be removed from the unit and relocated in the living space. An insulated cover plate is provided to cover the dehumidistat opening.
2. The dehumidifier must be installed in a secondary drain pan with a float switch.

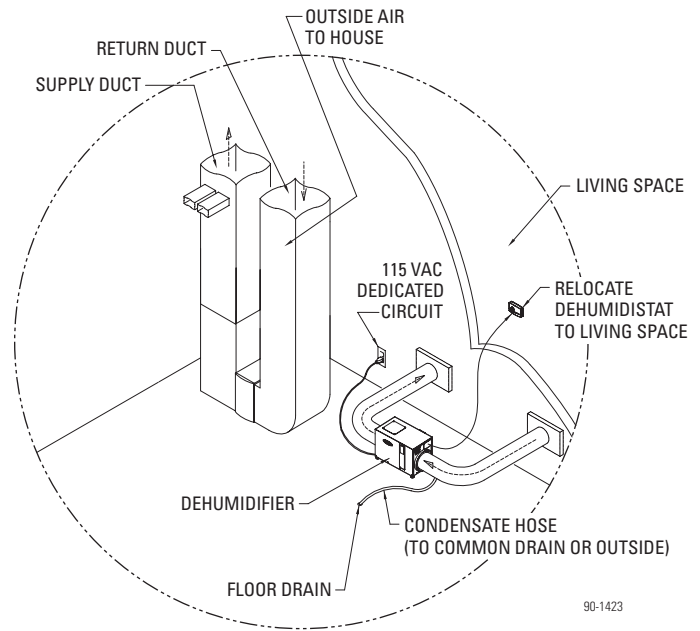
Note 2: Vibration isolators placed under the dehumidifier feet are recommended when the dehumidifier is installed on ceiling joists.

STAND ALONE INSTALLATION

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

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

FIGURE 8 – Stand Alone, Ducted



LEVELING

The feet can be adjusted to level the unit and/or to accommodate a p-trap. Leveling is required to ensure proper drainage from the dehumidifier.

- Minimum unit height (feet fully retracted): 2.5"
- Maximum unit height (feet fully extended): 5.75"

WIRING

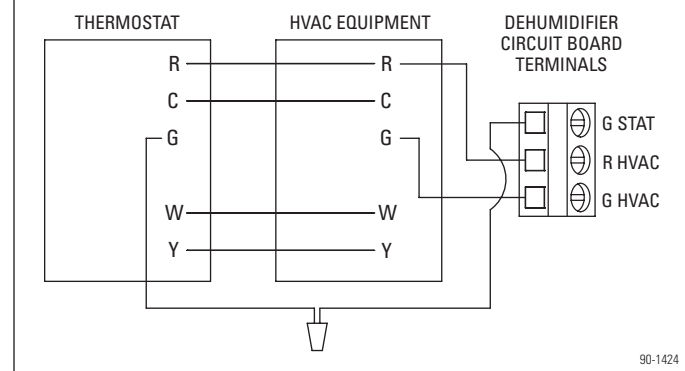
WIRING TO HVAC SYSTEM

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. 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. Unplug the G-STAT, R-HVAC, & G-HVAC terminals. Make the connections shown in **Figure 9**.
6. Plug terminals back into circuit board.
7. Replace the wiring access panel when wiring is complete.

FIGURE 9 – DEH/HVAC Wiring Instructions



DEHUMIDISTAT WALL MOUNT INSTALLATION (FIGURE 10)

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 metal 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 11**.
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.

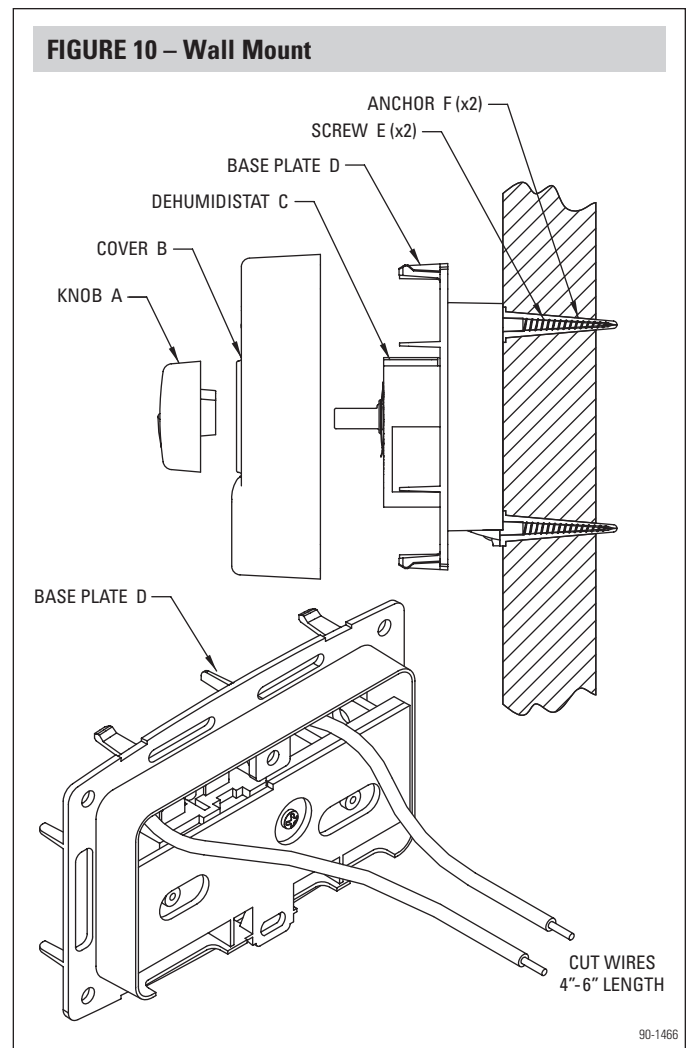
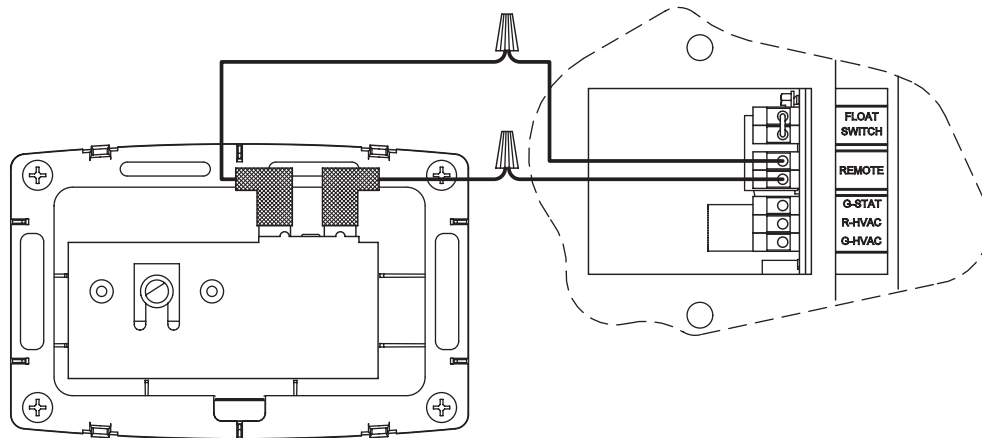


FIGURE 11 – Dehumidistat to Unit Wiring



90-1466

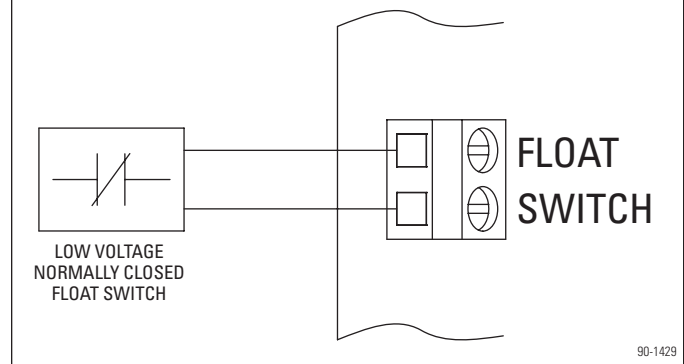
FLOAT SWITCH

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 12**). 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 12**).
5. Replace the wiring access panel.

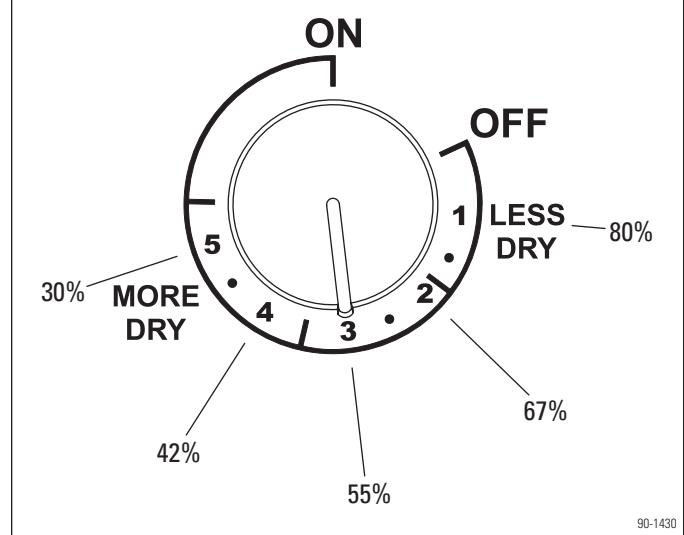
FIGURE 12 – Wiring to Float Switch



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.
4. Rotate the dehumidistat knob fully clockwise to ON position.
5. If setup 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 3 for most installations. Moving the knob towards "MORE DRY" will increase the amount of time the dehumidifier runs, making conditions dryer. Moving the knob towards "LESS DRY" reduces the amount of time the dehumidifier runs, allowing for higher humidity levels. See **Figure 13** for knob setpoints and corresponding %RH levels (+/- 6% RH).

FIGURE 13 – Dehumidistat Setpoints



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. When the humidity level rises above the dial setting on the dehumidistat, the dehumidifier blower will turn on and the first amber LED on the power board (not visible unless dehumidifier cover is removed) will illuminate. The HVAC system blower, along with the third amber LED (not visible unless dehumidifier cover is removed) will also turn on if the dehumidifier is wired to the HVAC system. After three minutes of blower operation, the dehumidifier compressor will turn on along with the second amber LED (not visible unless dehumidifier cover is removed). When the humidity level drops below the dial setting on the dehumidistat, both the compressor and dehumidifier blower will turn off. If wired to the HVAC system, the HVAC blower will also turn off unless the system thermostat keeps it running. To prevent short-cycling, the compressor will turn on 3 minutes after the blower.

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.
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 (dedicated 15 amp circuit recommended) <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.	This is normal operation.

RESEARCH PRODUCTS CORPORATION

P.O. Box 1467 • Madison, WI 53701-1467 • Phone: 608/257-8801 • Fax: 608/257-4357 • www.aprilairepartners.com