

AprilAire®

Dehumidifier

INSTALLATION & OWNER'S MANUAL

Model E080 & E100

80 & 100 PPD Professional-Grade,
Whole-House Dehumidifiers

Installed By:

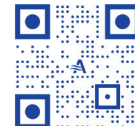
Installer Phone:

Date Installed:



Manufacturing
Use Only

Product Info &
Digital Manual



PLEASE LEAVE THIS MANUAL WITH THE DEHUMIDIFIER OWNER

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SPECIFICATIONS

	Model E080 and E080H		Model E100, E100C, and E100H	
Unit Weight	63 lbs.		64 lbs.	
Capacity 80°F, 60% RH Conditions	80 pints per day @ 185 CFM		100 pints per day @ 280 CFM	
Power 115 VAC, Single Phase, 60 Hz	5.1 A operating current		6.9 A operating current	
Dehumidifier Inlet Air Conditions	Dehumidification: 50°F–104°F, 40°F dew point minimum Ventilation: 40°F–140°F, 0% RH–99% RH (non-condensing)			
Filter	MERV 8, washable			
Airflow	External Static Pressure ("w.c.)	Airflow (CFM)	External Static Pressure ("w.c.)	Airflow (CFM)
	0.0	185	0.0	280
	0.2	135	0.2	245
	0.4	85	0.4	210
	Installation not advised		0.6	175

NOTE: Rated capacity and current draw measured at 80°F/60% RH inlet conditions at 0.0 external static pressure.

SAFETY INSTRUCTIONS

Be sure to read and understand all safety precautions and instructions before installing and operating the unit.

⚠ WARNING

The following precautions indicate a hazardous situation that, if not avoided, could result in death or serious injury.

- Always disconnect electrical power before starting installation or servicing to avoid electric shock.
- Always wear glasses/goggles and gloves when installing the unit. Sharp edges may cause serious cuts. Use care when cutting plenum openings and handling ductwork.
- Be sure to use caution when handling the unit. Dropping the unit may cause personal injury or equipment damage.

⚠ CAUTION

The following precautions indicate a hazardous situation that, if not avoided, could result in minor or moderate injury.

- Be sure the installation, service and maintenance are performed by a qualified service technician. Improper installation may cause injury or property damage.
- This unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the unit by a person responsible for their safety.
- Be sure to supervise children to ensure that they do not play with the unit.
- Be sure to replace a damaged supply cord. It must be replaced by a special cord or assembly available from the manufacturer or its service agent.

NOTICE

The following statements indicate a situation which can cause damage to the equipment and personal property, or cause the equipment to operate improperly.

- Do not use in pool applications. Pool chemicals can damage the dehumidifier.
- Do not use solvents or cleaners on or near the circuit board. Chemicals can damage circuit board components.
- Wait 24 hours before running the unit if it was not shipped or stored in the upright position.
- Do not use dehumidification to prevent window condensation in the winter. To address window condensation, use ventilation to lower indoor humidity in the winter.

WHOLE HOME DEHUMIDIFICATION

The AprilAire Dehumidifier controls the humidity level in your entire home. A powerful blower inside the dehumidifier draws air into the cabinet where it is filtered before having moisture removed. A sealed refrigeration system removes moisture by moving the air through a series of tubes and fins that

are kept colder than the dew point of the incoming air. The dew point is the temperature at which moisture in the air will condense, much like what occurs on the outside of a cold glass on a hot summer day. The condensed moisture drips into the dehumidifier drain pan to a drain tube routed to the nearest floor drain or condensate pump. After the moisture is

removed, the air moves through a second coil where it is reheated before being sent back into the home. The air leaving the dehumidifier will be warmer and drier than the air entering the dehumidifier.

You can reduce the amount of humidity that enters the home by closing windows, doors and fireplace flues when

outdoor humidity is high, and by drying clothes outside. Direct exhaust from kitchen vents and bath fans is the best means of controlling humidity due to cooking and showers/baths. The dehumidifier is not designed to prevent window condensation in winter. Use ventilation to lower indoor humidity levels in the winter.



Model E100



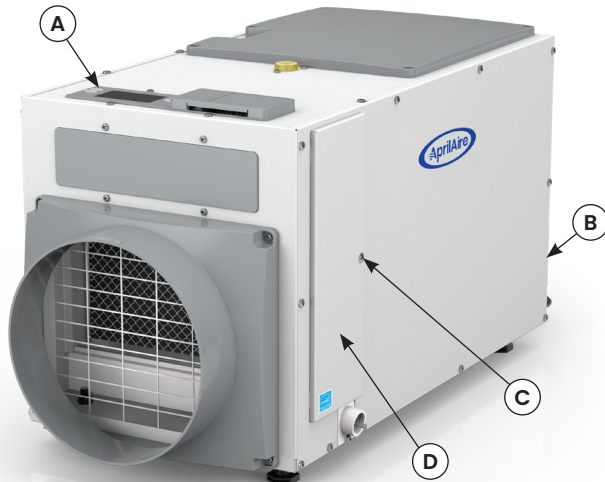
Model E100C

OPERATING THE DEHUMIDIFIER

1. If equipped, use the ON/OFF power switch, located by the power cord, to apply power to the dehumidifier.

NOTE: The unit can remain plugged in with the ON/OFF power switch on (if equipped) unless the unit will not be used for an extended period. Use the ON/OFF button on the user interface to turn the unit off for short durations. When the unit is idle (neither the fan nor the compressor running) the unit will use less than 3W of power.

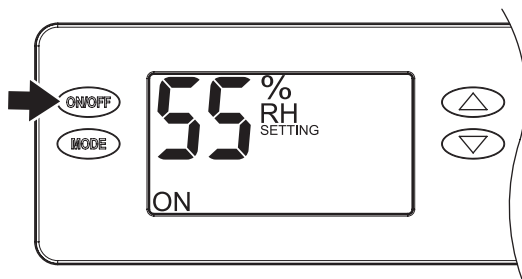
FIGURE 1: EXTERIOR COMPONENTS OF THE DEHUMIDIFIER



- A. USER INTERFACE
- B. ON/OFF POWER SWITCH (SELECT MODELS)
- C. FILTER ACCESS DOOR RETAINING SCREW
- D. FILTER ACCESS DOOR

2. Use the ON/OFF button (see **FIGURE 2**) on the user interface to turn the dehumidifier ON. **The first press of a button will turn on the display light**, so if the display was dark, you might need to press it again. Once ON, the display will show the current dehumidifier setting.

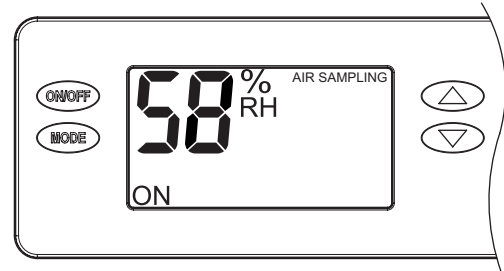
FIGURE 2: TURNING DEHUMIDIFIER ON



3. The dehumidifier blower will turn on, the word **SETTING** disappears from the display, and the words **AIR SAMPLING** appear (see **FIGURE 3**). This wording indicates that the dehumidifier is sampling the air to determine if dehumidification is needed and shows the measured humidity level.

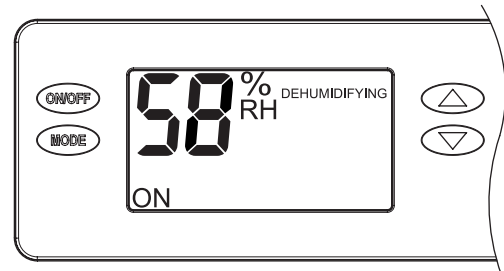
If the control is already ON, lowering the setting will initiate air sampling.

FIGURE 3: AIR SAMPLING



4. After sampling the air for 3 minutes, if the Relative Humidity (RH) is above the setting, the compressor turns on to dehumidify the space. The word **DEHUMIDIFYING** appears when the compressor is turned on (see **FIGURE 4**).

FIGURE 4: DEHUMIDIFYING



ENERGY SAVINGS TIPS

ENERGY SAVINGS TIP #1:

Adjust the humidity setting to be as high as is comfortable to reduce dehumidifier run time. If it feels clammy or "smells musty," lower the humidity setting. To save energy, turn the dehumidifier to OFF when you open your windows, just as you would with air conditioning.

ENERGY SAVINGS TIP #2:

If vacating your home for an extended period in the summer, set the RH at 55% and set your thermostat as high as you are comfortable setting it to in the cooling mode. This will keep the humidity at a controlled level while minimizing the amount of cooling energy used.

MAINTENANCE

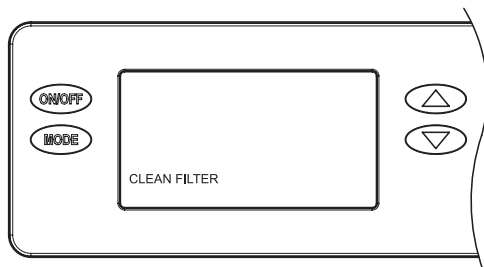
CLEANING THE FILTER

After initial installation the air filter and drain should be checked and cleaned every 6 months.

1. Press the ON/OFF button on the user interface to turn the unit OFF.
2. Loosen the retaining screw on the filter access door (see **FIGURE 1**) from the drain side of the dehumidifier until it releases and then remove the filter door.
3. Slide the filter out of the dehumidifier.
4. Rinse the filter with water to remove dust and collected particles from the filter.
5. Shake off excess water from the filter.
6. Clean the drain as described in **CLEANING THE DRAIN** on page 5.
7. Reinstall the filter. An arrow on the filter frame shows the direction of airflow and it should point into the dehumidifier.
8. If the filter does not slide back in, make sure the drain insert has been properly installed. See **INSTALLING THE DRAIN** on page 9.
9. Replace the filter access door and tighten the retaining screw.
10. Press the ON/OFF button to turn the dehumidifier back ON.

The **CLEAN FILTER** service reminder (see **FIGURE 5**) will display on the control every 6 months. **To clear the service message, press the ▲ and ▼ buttons simultaneously for 3 seconds.**

FIGURE 5: CLEAN FILTER SERVICE REMINDER

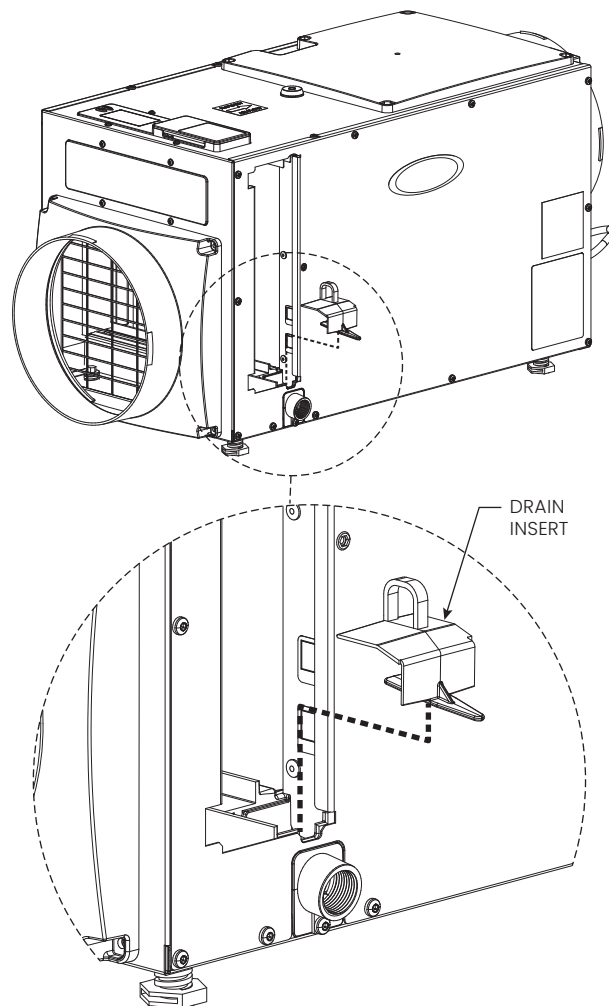


CLEANING THE DRAIN

1. With the filter door on the drain side of the dehumidifier removed, reach in and pull out the drain insert using the finger loop (see **FIGURE 6**).

NOTE: Drain insert must be installed before operating.

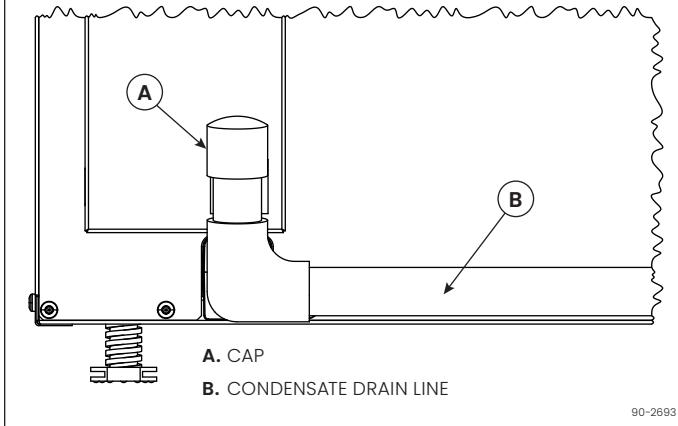
FIGURE 6: DRAIN CLEANING



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2. Clean the accessible portion of the drain pan and the drain insert using a mild detergent.
3. If the drain has a capped tee or elbow to allow cleaner to be poured directly in the drain, remove the cap and pour approximately one cup of white vinegar into the tube (see **FIGURE 7**). If there is no visible access to the drain line from outside of the dehumidifier, pour approximately one cup of vinegar into the drain pan of the dehumidifier where the drain insert was located.

FIGURE 7: CAPPED DRAIN ACCESS FOR CLEANING PROCESS



4. Reinstall the drain insert by gently placing the tip into the drain opening and rocking the insert downwards into place (see **FIGURE 6**). When inserted properly, the top of the drain insert will be at the same height as the filter guide channel.
5. If the dehumidifier has clear flexible drain tubing, look for excess buildup in the drain line that might prevent water flow, and replace as needed. Clear, smooth, flexible 3/4" Inside Diameter (ID) drain tubing is available in most hardware stores or Do-It-Yourself (DIY) retail stores.

NOTICE

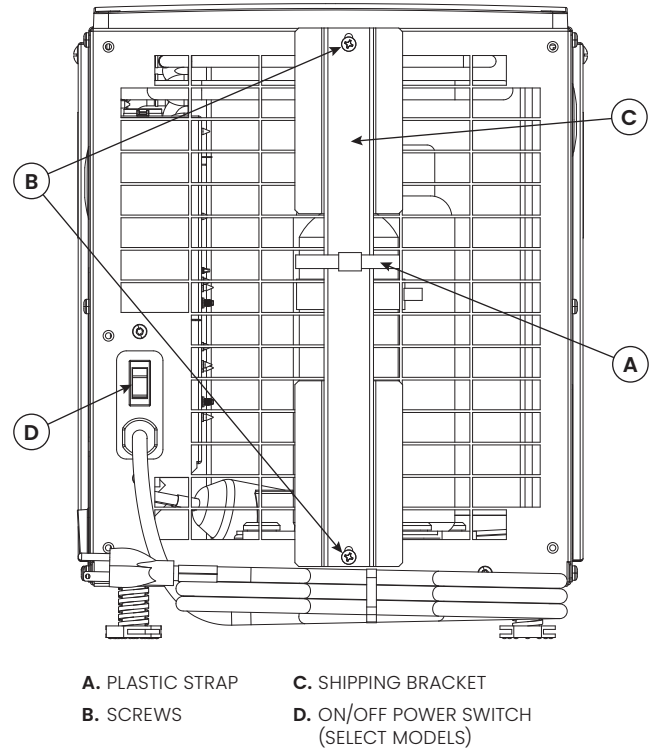
Running the dehumidifier without the drain insert can lead to condensate leaks.

PREPARING THE UNIT FOR INSTALLATION

IMPORTANT: Cut the strap securing the compressor shipping support bracket and remove the strap and shipping bracket (see **FIGURE 8**).

1. Clip off and remove the plastic straps securing the compressor to the shipping bracket.
2. Remove the two screws securing the shipping bracket to the housing. Remove and discard the shipping bracket, and reinstall the two screws in the dehumidifier.

FIGURE 8: PREPARING THE UNIT FOR INSTALLATION



REPOSITIONING THE USER INTERFACE FOR THE APPLICATION

Locate the onboard user interface on the top of the dehumidifier or at the front of the dehumidifier if the user interface cannot be seen/accessed in the top orientation. It may also be rotated 180 degrees in either orientation (see **FIGURE 10**).

FIGURE 9: USER INTERFACE LOCATION

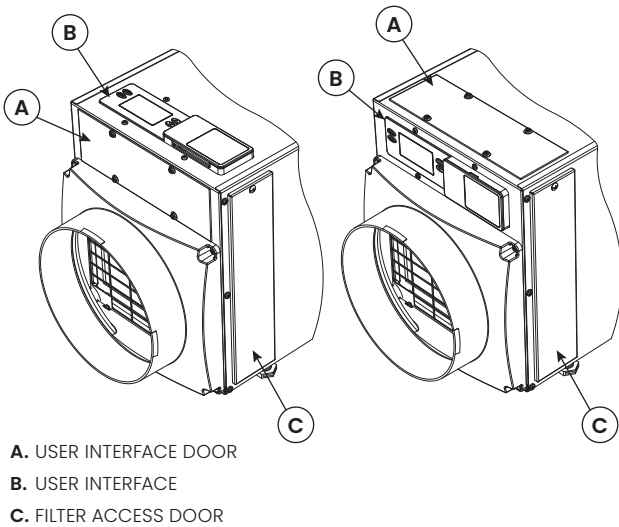
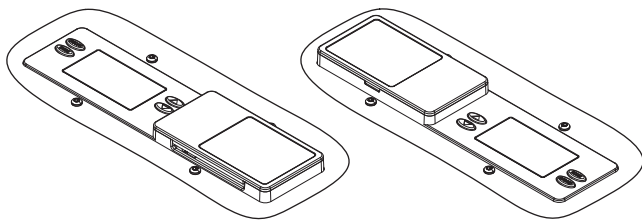


FIGURE 10: USER INTERFACE ROTATED 180 DEGREES



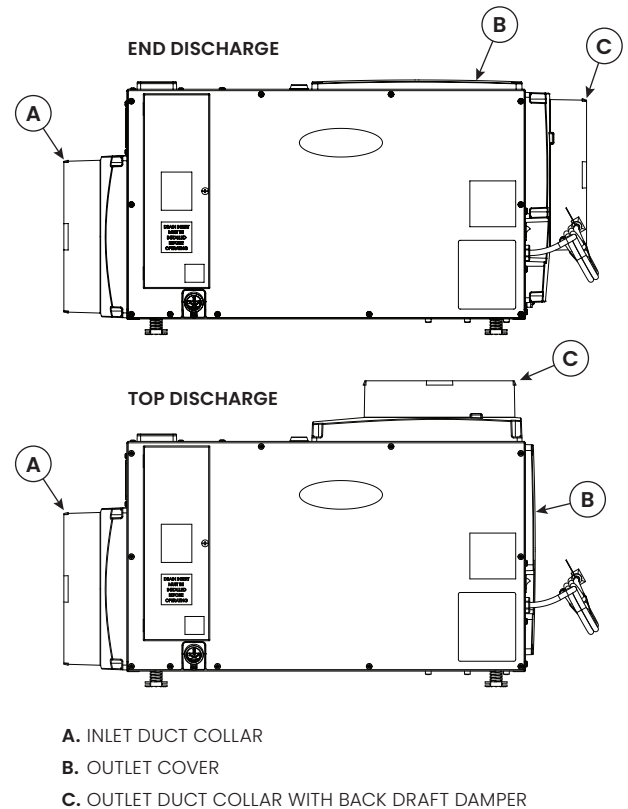
MOVING THE CONTROL

1. Remove the front user interface door.
2. Remove the filter access door and filter.
3. Detach the onboard user interface by removing the four (4) screws around the user interface.
NOTE: Use one hand to support the bottom of the onboard user interface when removing.
4. Keep the user interface in the unit and relocate to the front access hole.
5. Secure the user interface with the same four screws used to attach the user interface to the top of the unit.
6. Secure the user interface door to the top of the unit.

INSTALLING THE DUCT COLLARS

- Use the screws in the parts bag to attach the duct collars to the inlet and outlet of the dehumidifier. The outlet collar has a backflow damper.
- The outlet duct collar may be attached to the top or end of the unit. Move the outlet cover to the location not being used (see **FIGURE 11**).
- Make sure there are no bends in the ductwork coming off the outlet **for a minimum of 4"**. This precaution will ensure that the ductwork will not interfere with the backflow damper function.

FIGURE 11: FULLY DUCTED INSTALLATIONS

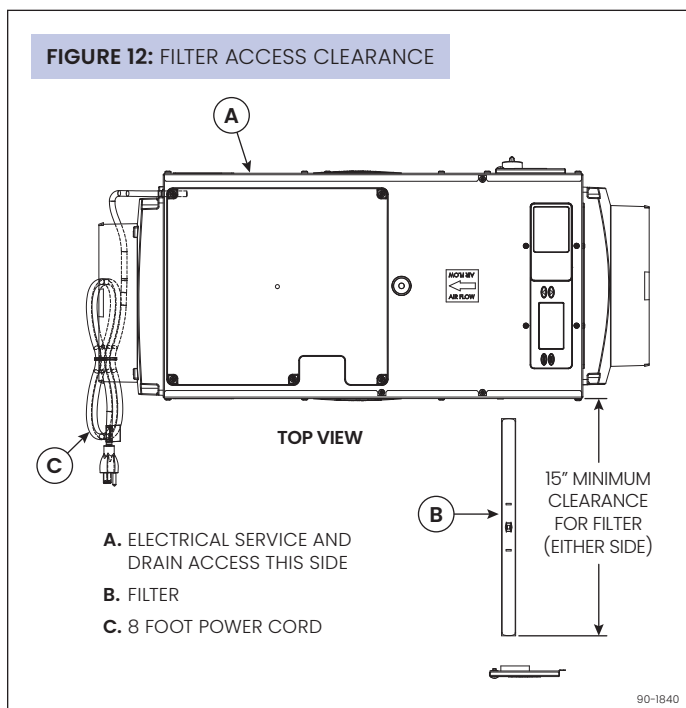


INSTALLING THE DEHUMIDIFIER

DEHUMIDIFIER LOCATION

- Electrical service access and drain cleaning will require the removal of the electrical service side panel (see **FIGURE 12**). Allow sufficient space for service on this side of the unit.
- The filter can be removed from either side of the dehumidifier. Allow sufficient space for the filter to be removed and reinstalled.
- If locating the unit where it is not readily accessible (such as a crawl space, an attic or even a basement for some individuals), consider controls such as the Model 76 Dehumidifier Control, which can be mounted in the living space and wired to the dehumidifier.
- For attic installations, suspending the dehumidifier is recommended to reduce noise transference.
- Always install the dehumidifier in or above a condensate pan when locating in or above a finished space.

FIGURE 12: FILTER ACCESS CLEARANCE



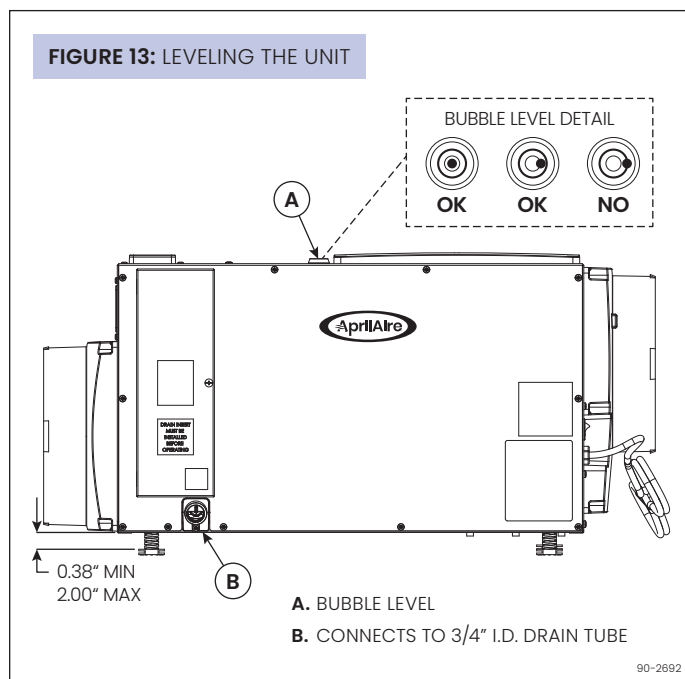
LEVELING AND RAISING THE DEHUMIDIFIER

NOTE: This does not apply to Model E100C.

The feet can be adjusted to level the unit and accommodate drain fittings and condensate pans as required. Use the top-mounted bubble level to adjust the feet until the bubble is within the outer circle (see **FIGURE 13**). Leveling is required to ensure proper drainage from the dehumidifier.

If installing a condensate pump to the side of the unit more elevation than can be provided by the adjustable feet may be needed. Risers (Part #5879) or hanging kits (Part #5822) are available to lift the dehumidifier higher off the floor.

FIGURE 13: LEVELING THE UNIT



INSTALLING A CONDENSATE PAN UNDER THE DEHUMIDIFIER

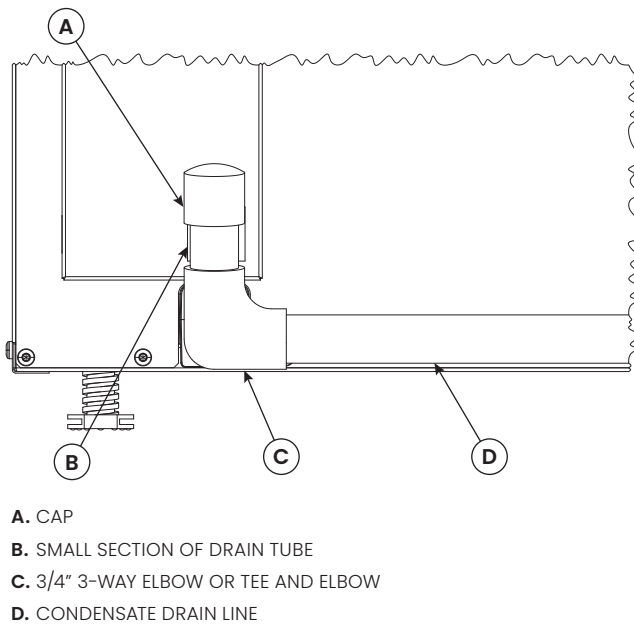
Always install the dehumidifier in or above a condensate pan when locating it above a finished space. Adhere to local codes regarding draining of the condensate pan. If a condensate pump is needed, make sure it is in the condensate pan as well. Install a float switch in the condensate pan and/or use the overflow wires/terminals on the condensate pump to stop the dehumidifier should overflow occur. See **WIRING TO A FLOAT SWITCH** on page 13.

INSTALLING THE DRAIN

USING HARD PIPE

- Install a 3/4" PVC slip x 3/4" MNPT PVC fitting to the dehumidifier and use 3/4" nominal PVC Schedule 40 pipe to run the condensate line to the nearest floor drain or to an outside location that slopes away from the building.
- **Always maintain a constant downward slope in drain piping. Ensure that drain tubing does not interfere with removal of the side panel or filter door.**
- **Do not use metal fittings and only hand-tighten threaded fittings.** PTFE thread seal tape is recommended for threaded connections.
- Install a tee or three-way elbow at the dehumidifier outlet with a small, capped vertical tube (do not cement cap in place) to allow for cleaner to be poured into the drain line (see **FIGURE 14**).
- PVC primer and cement is recommended for slip-fit connections (do not cement threaded connections).

FIGURE 14: CAPPED DRAIN ACCESS FOR CLEANING



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USING FLEXIBLE TUBING

- Install the provided 3/4" NPT x 3/4" hose barb fitting and use 3/4" I.D. flexible drain tubing. **Hand-tighten the fitting to the dehumidifier.** PTFE thread seal tape is recommended for threaded connections.
- **Always maintain a constant downward slope from the dehumidifier to the nearest floor drain or condensate pump, and do not allow soft tubing to curl up, which may result in air lock.**

INSTALLING DUCTWORK

- Use insulated duct when the dehumidifier is located in an unconditioned space, such as an attic, garage or crawl space, or if connecting a fresh air duct to the dehumidifier ductwork.
- Use zip ties, mastic, and tape as needed to seal the duct connections to the dehumidifier and to seal the insulation sleeves to prevent condensation inside the ductwork.

Connecting the dehumidifier to your HVAC system will pull air to be dehumidified from the whole home and similarly will discharge air to the whole home. **Make sure the duct system pressure the dehumidifier will have to operate against does not exceed 0.4" Water Column (w.c.) for Model E080 and 0.6" w.c. for Models E100/E100H. Measure the system pressure when the HVAC fan is operating at the highest airflow (speed) setting.**

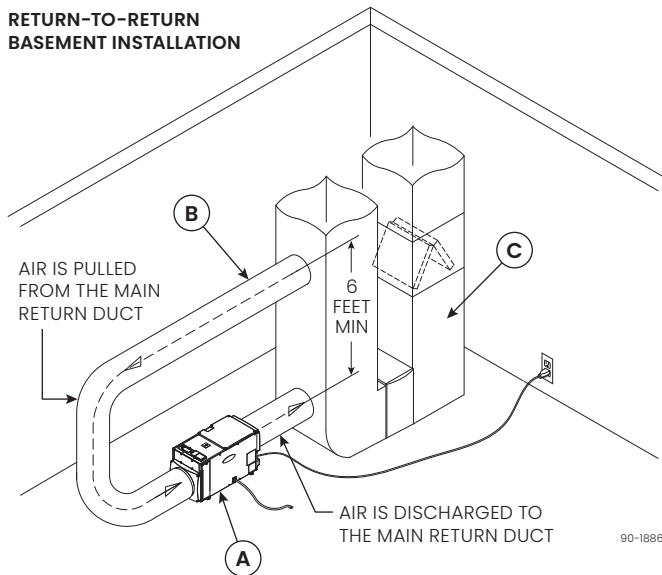
There are not always readily available locations on the HVAC duct system for connecting 10" ducts, and some local codes do not allow ducting to the return side of the HVAC system. If so, another option is to install just the discharge of the dehumidifier to the HVAC system (see **FIGURE 16** and **FIGURE 17**) or to use dedicated registers for both the inlet and discharge of the dehumidifier (see **FIGURE 18**).

DUCTING THE DEHUMIDIFIER INLET AND OUTLET TO THE HVAC SYSTEM

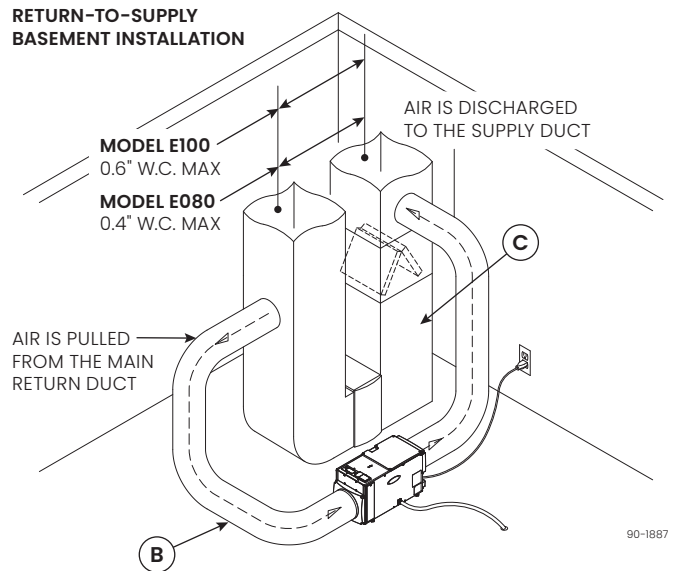
- Use when both sides of the duct system are accessible (see **FIGURE 15**).
- When ducting from return to supply, the HVAC blower does not need to be running when the dehumidifier is running.
- When ducting return to supply, allow adequate space (24" min) before the first branch duct to ensure the warm dehumidified air is thoroughly mixed with the HVAC system air.
- When ducting from return to return, wire the dehumidifier to the HVAC system as shown in **FIGURE 20** to ensure the HVAC blower runs when the dehumidifier is operating.
- Wire the dehumidifier to the HVAC system (see **FIGURE 20** for exact wiring) and set up the dehumidifier to be disabled when the AC is running.

FIGURE 15: FOUR INSTALLATION CONFIGURATIONS

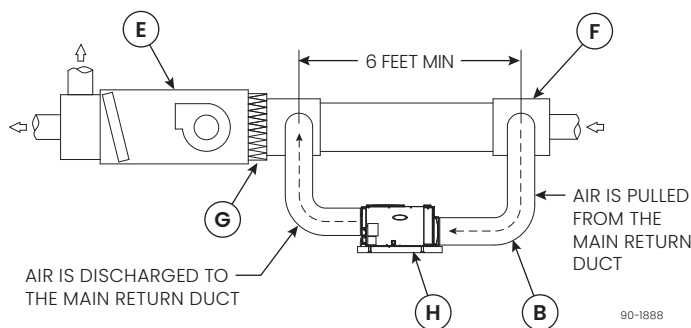
RETURN-TO-RETURN BASEMENT INSTALLATION



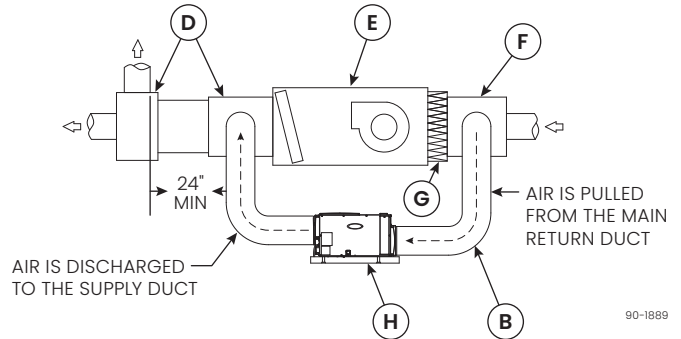
RETURN-TO-SUPPLY BASEMENT INSTALLATION



RETURN-TO-RETURN ATTIC INSTALLATION



RETURN-TO-SUPPLY ATTIC INSTALLATION



A. DEHUMIDIFIER

B. 10" DIAMETER INSULATED DUCT

C. HVAC/FURNACE

D. PLENUM BOX

E. AIR HANDLER

F. PLENUM BOX OR Y-FITTING

G. FILTER

H. CONDENSATE PAN

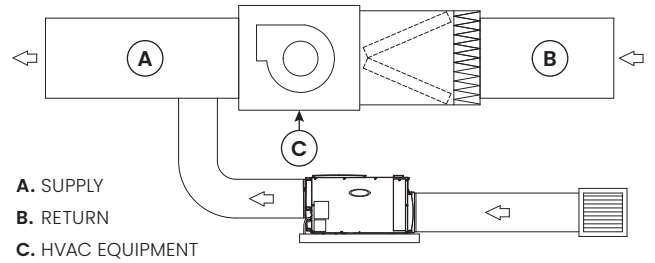
DUCTING THE DEHUMIDIFIER OUTLET TO THE HVAC SYSTEM WITH DEDICATED DEHUMIDIFIER INLET REGISTER

- To direct dehumidified air away from a potentially wet AC coil, duct to the supply side of the HVAC system for air handler applications where air is pulled through the AC coil (see **FIGURE 16**).
- Duct to the return side of the HVAC system for furnace applications where air is pushed through the AC coil. Check local codes to verify that ducting to the return side of the HVAC system is allowed (see **FIGURE 17**).
- Wire the dehumidifier to the HVAC system as shown in **FIGURE 20** and set up the dehumidifier to be disabled when the AC is running.

Use dedicated registers to duct the dehumidifier to the whole home when HVAC system ductwork is unavailable or impractical (see **FIGURE 18**).

FIGURE 16: DISCHARGE TO SUPPLY SIDE

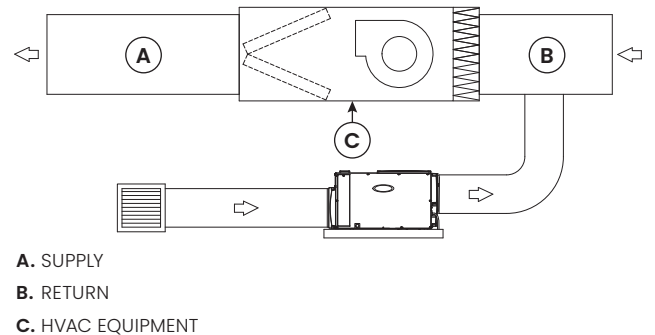
DEDICATED RETURN TO MAIN SUPPLY



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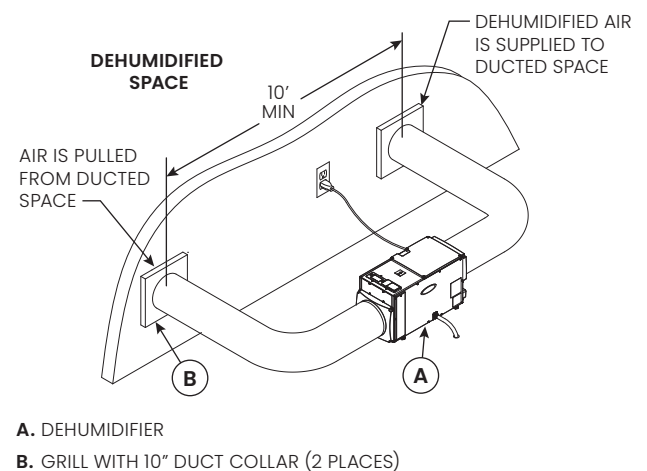
FIGURE 17: DISCHARGE TO RETURN SIDE

DEDICATED RETURN TO MAIN SUPPLY



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FIGURE 18: STAND-ALONE DUCT



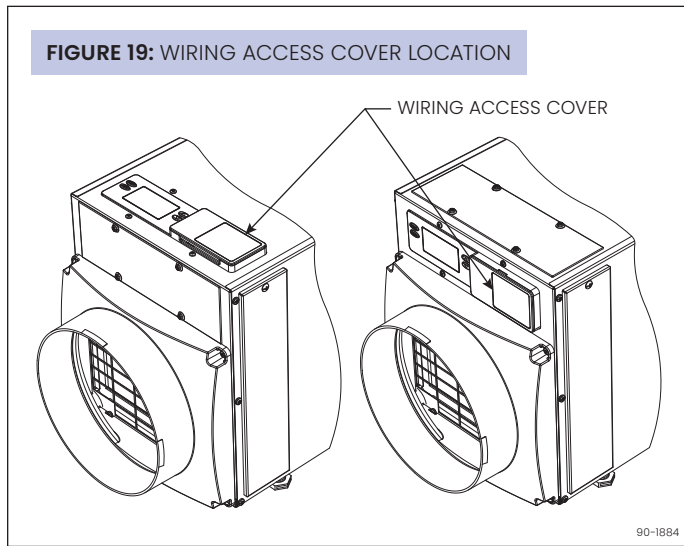
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WIRING

No additional wiring is needed unless:

- the dehumidifier is ducted to the HVAC system
- a separate, external control such as a thermostat or dehumidistat is to be used
- a float switch, either integral to a condensate pump or mounted to the condensate pan, is used

Use 18-22 AWG wire for any needed wiring. Access the dehumidifier wiring terminals by pulling off the wiring access cover near the dehumidifier control display (see **FIGURE 19**). Snap the wiring access cover back into place after completing all wiring.

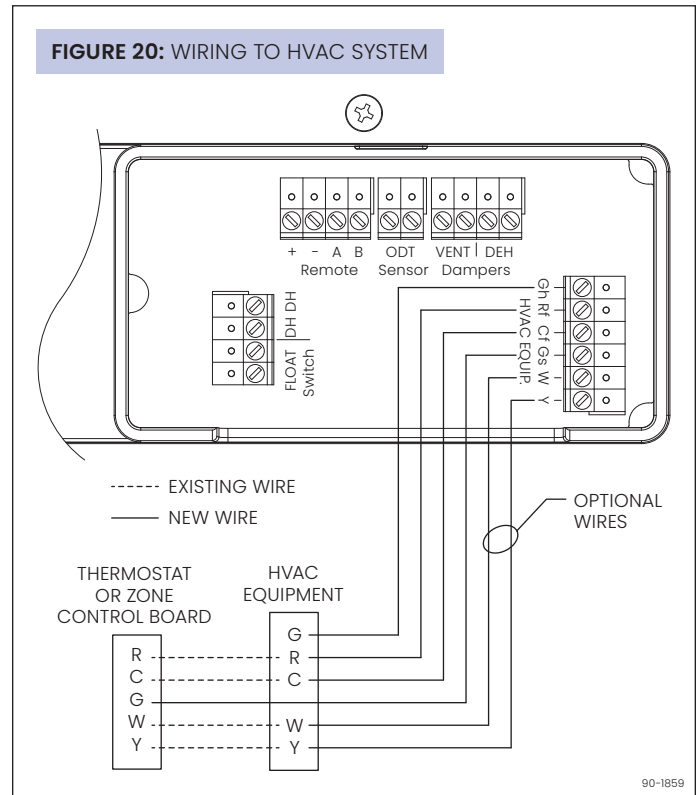


WIRING TO THE HVAC SYSTEM

When the dehumidifier is ducted to the HVAC system, it is recommended that it also be wired to the HVAC system as shown in **FIGURE 20**. If ducted to the HVAC system in a return-to-return configuration, the dehumidifier **must** be wired to the HVAC system to prevent short-circuiting dehumidified air directly back to the dehumidifier inlet. In a return-to-supply ducting configuration, running the HVAC fan with the dehumidifier ensures the warm dry air is mixed with room air before being discharged to the home.

OPTIONAL W & Y WIRING

- Wire the W and/or Y terminal to the HVAC system when using the ventilation feature of the dehumidifier. See **VENTILATION** on page 14.
- Wire the dehumidifier Y terminal to the HVAC system to disable the dehumidifier compressor from operating when the air conditioning is running. See **ENABLING DEH W/AC** on page 17 for additional setup steps required to access this feature.



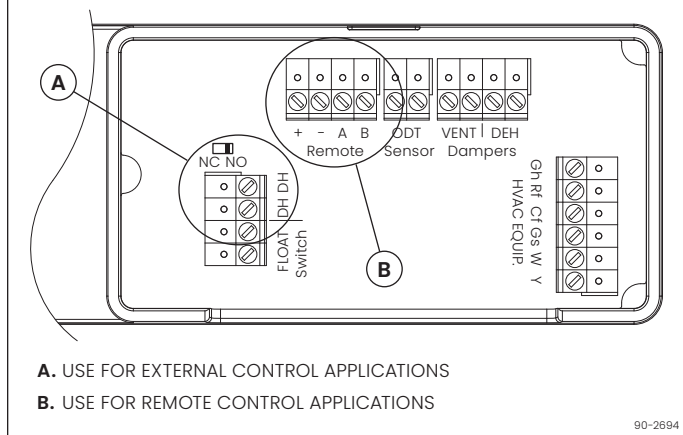
WIRING TO EXTERNAL OR REMOTE CONTROLS

The dehumidifier can be wired to an **external control** that senses the humidity in the living space, such as an AprilAire Thermostat or the Model 76 Dehumidifier Control. This is most often done when the **dehumidifier is ducted to the HVAC system** and is located in a hard-to-reach location such as an attic or basement.

The Model 76, when used as a **remote control**, allows the user to see the humidity sensed by the dehumidifier and adjust the dehumidifier setting from a remote location. This is most often used when the **dehumidifier is not ducted to the HVAC system** and serves a hard-to-reach location such as a crawl space or basement.

If using an **external control**, wire to the DH terminals of the dehumidifier (see **FIGURE 21**). Most external controls use a normally open switch that closes with a dehumidification demand, in which case leave the NC/NO switch in the NO position. For controls that use a normally closed switch, put the NC/NO switch in the NC position. If using the AprilAire Model 76 as a **remote control**, wire to the (+ - A B) terminals. Refer to the installation instructions for the control being used for wiring details.

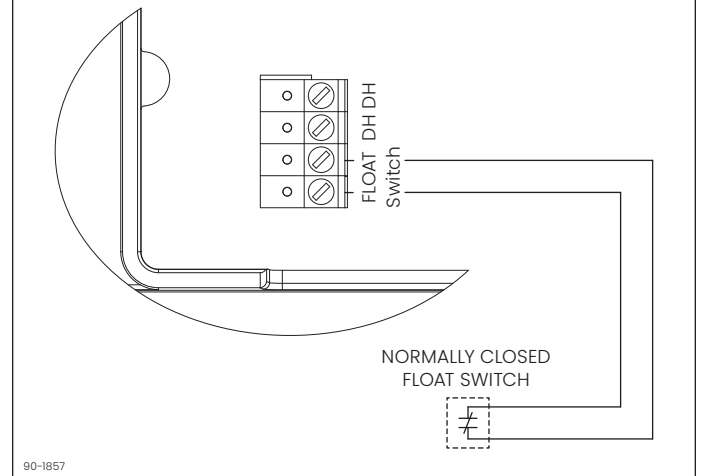
FIGURE 21: WIRING TO AN EXTERNAL OR REMOTE CONTROL



WIRING TO A FLOAT SWITCH

Use only if the installation includes a float switch or a condensate pump. The dehumidifier leaves the factory with a jumper wire installed in the float switch terminals. Remove the jumper and wire the float switch terminals to the float switch or condensate pump overflow switch as shown in **FIGURE 22**.

FIGURE 22: FLOAT SWITCH WIRING

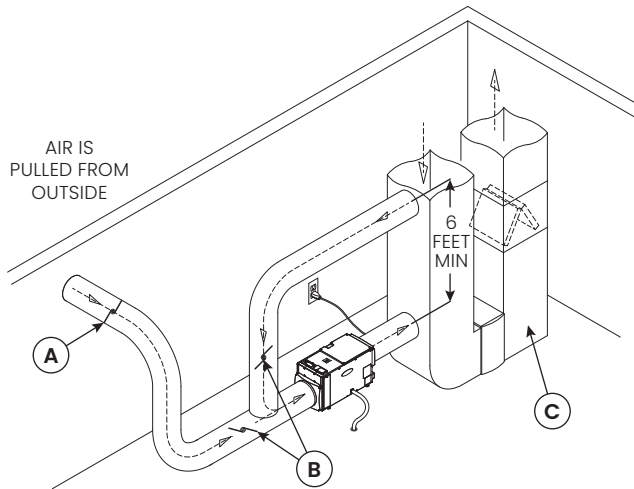


VENTILATION

The dehumidifier can activate a normally closed damper to bring in outdoor air through a fresh air intake duct. This feature cannot be used when a Model 76 has been installed in a remote control application and should not be used in two-zone installations.

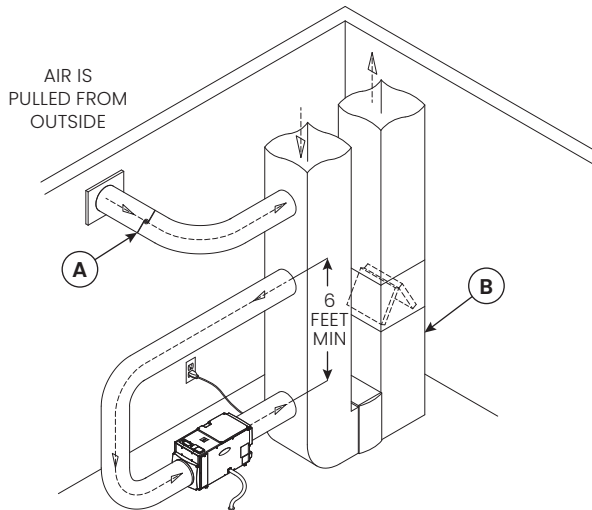
1. Install the Fresh Air Inlet (FAI) duct and damper as shown in **FIGURE 23** and **FIGURE 24**.

FIGURE 23: ONBOARD CONTROL VENTILATION INSTALLATION



90-1897

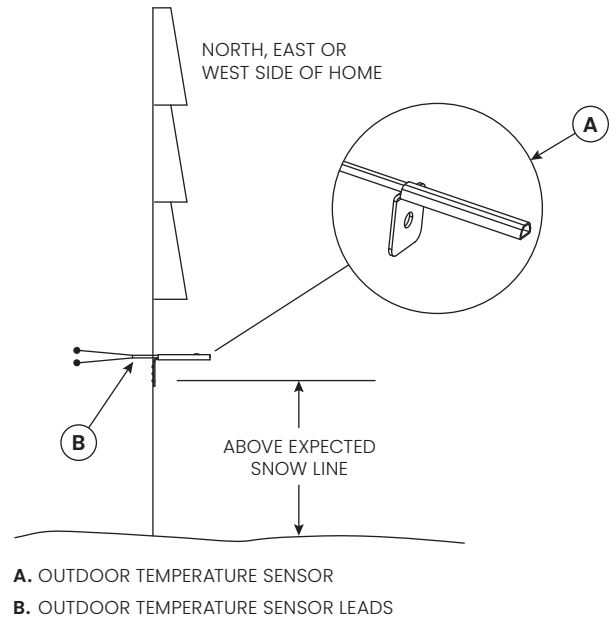
FIGURE 24: EXTERNAL CONTROL VENTILATION INSTALLATION



90-1898

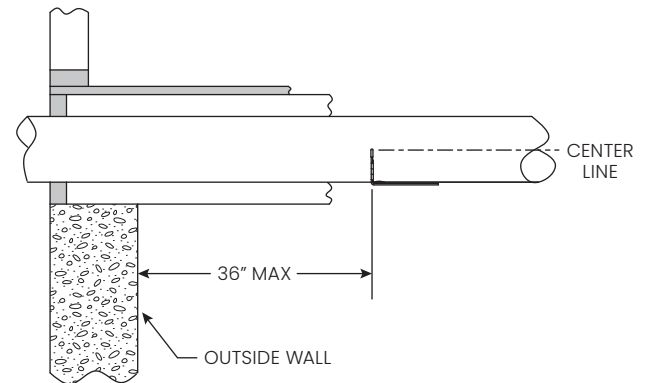
2. Install the Outdoor Temperature Sensor (ODT) as shown in **FIGURE 25** and **FIGURE 26** – only needed if ventilation will be limited during high or low outdoor temperature conditions.

FIGURE 25: ODT MOUNTED OUTSIDE



B2202617-D

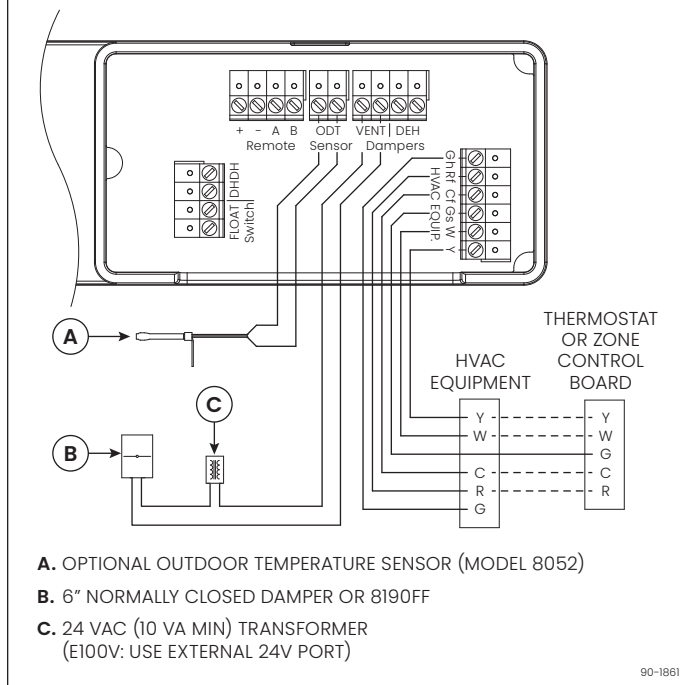
FIGURE 26: ODT MOUNTED IN INTAKE DUCT



B2202617-E

3. Wire the FAI damper, HVAC equipment and outdoor temperature sensor to the dehumidifier control as shown in **FIGURE 27**.

FIGURE 27: VENTILATION WIRING



4. Use the setup menu to **ENABLE** ventilation:
- Enter the installer setup menu (see page 16).
 - Press the Mode button until the words **VENT DISABLE** appear.
 - Press the ▲ or ▼ button to change to **VENT ENABLE**.
 - Press the Mode button and the words **VENT TIMED** will appear. Press the ▲ or ▼ button to set temperature limits:
 - TIMED:** no temperature limits
 - AUTO – B:** Ventilation is not allowed if the ODT > 100°F or ODT < 0°F; ventilation is allowed only when the heat is on if the ODT is between 0°F and 20°F
 - AUTO – C:** Ventilation is not allowed if the ODT > 100°F or ODT < 0°F
 - AUTO – D:** Ventilation is not allowed if the ODT > 90°F; ventilation is allowed only when the heat is on if the ODT is between 0°F and 40°F
 - Press the Mode button and then use the ▲ or ▼ button to set the ventilation time (minutes/hour).
 - Press the Mode button repeatedly until the word **DONE** appears on the display.

Whenever the heating, cooling or dehumidifier is active, the ventilation damper will open and bring in outdoor air. If the equipment doesn't run for the set number of minutes, the dehumidifier will turn on the HVAC fan at the end of the hour to ensure ventilation needs are met.

ZONING THE DEHUMIDIFIER

The dehumidifier can be configured to condition two independent spaces. Zoning requires the installation of ductwork and dampers to direct air to and from two locations.

NOTE: Dehumidifier zoning is not recommended in HVAC zoning applications.

In this installation the dehumidifier controls the humidity in two separate zones, a Primary and Secondary Zone. The dehumidifier will dehumidify the Primary Zone as the first priority and will switch to the Secondary Zone after the dehumidification needs of the Primary Zone have been satisfied.

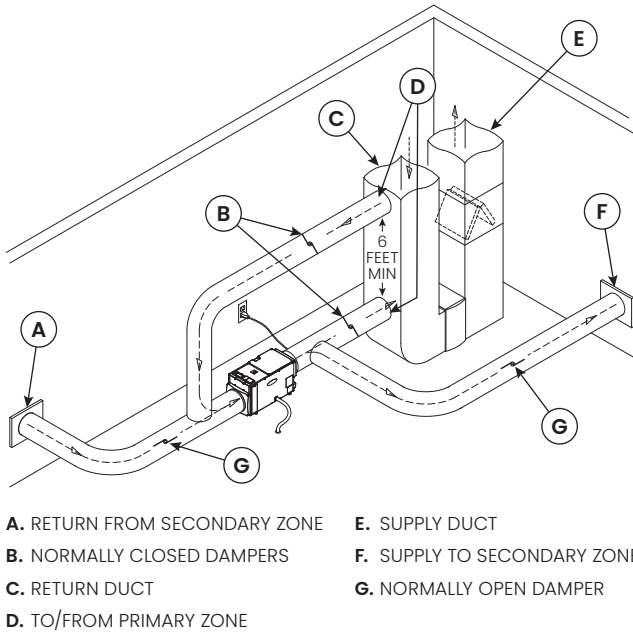
IMPORTANT: Normally Closed dampers must be installed in the ducts serving the Primary Zone and Normally Open dampers installed in the ducts serving the Secondary Zone.

REQUIRED COMPONENTS

- 10" ductwork and fittings
- Grilles with 10" duct collars
- Drain line
- (2) AprilAire Model 6510, 10" Normally Closed damper
- (2) AprilAire Model 6610, 10" Normally Open damper
- 24 VAC transformer (40 VA min.) for dampers

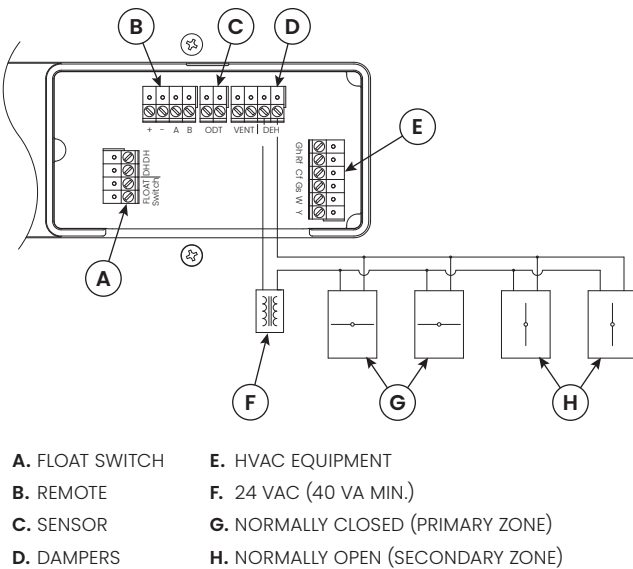
NOTE: 5442 Basement Kit includes (2) 6510 Dampers, (2) 6610 Dampers and a 24 VAC (40 VA) transformer.

FIGURE 28: WHOLE-HOME PRIMARY ZONE INSTALLATION



90-1875

FIGURE 29: TWO-ZONE WIRING ON-BOARD CONTROL



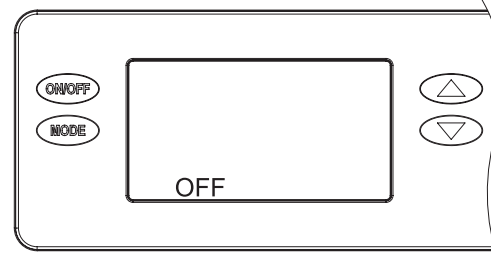
90-1896

INSTALLER SETUP

Enter the setup menu if:

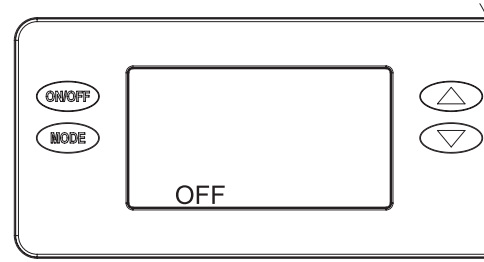
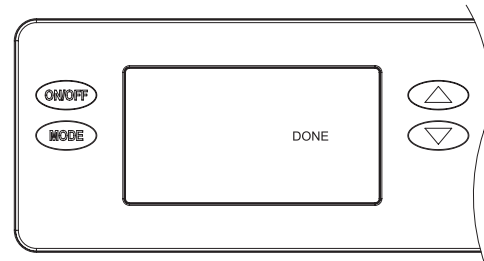
- the dehumidifier is ducted to the HVAC system
- an external or remote control will be used
- ventilation or zoning will be used

1. Plug unit in and turn power switch ON (if equipped).
2. The onboard control screen should display **OFF**. If not OFF, press the ON/OFF button to turn the unit OFF.



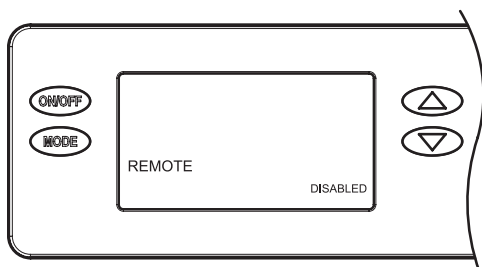
NOTE: If the display backlight is not on, the first button press (any button) will only turn on the backlight. Press the button a second time to achieve function.

3. Hold the MODE button on the onboard control for 3 seconds to enter the installer setup menu.
4. Navigate through the following screens to set up the dehumidifier for the installed application.
5. Use the ▲ or ▼ button to select items and use the MODE button to switch to the next setup option. To exit the installer setup, scroll through all options using the MODE button.
6. After the installer setup options have been completed, the word **DONE** will blink for 3 seconds and the control will return to the **OFF** screen.



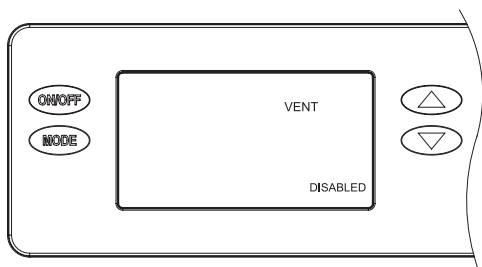
SETTING UP REMOTE CONTROL – CRAWL SPACE/SEALED ATTIC

If wiring to a Model 76 for remote control (see pages 13 and 19 for details) press the ▲ or ▼ button to **ENABLE**.



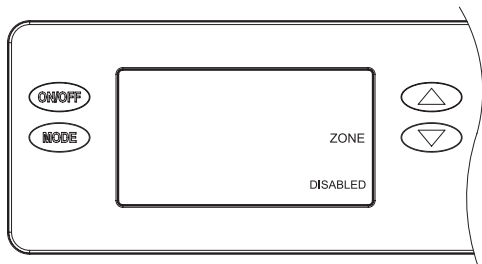
SETTING UP VENTILATION

See page 14 for details if using the dehumidifier for ventilation.



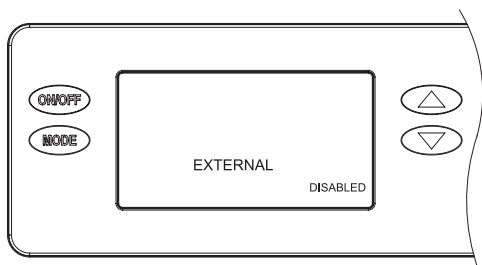
SETTING UP ZONING

See page 15 if zoning the dehumidifier.



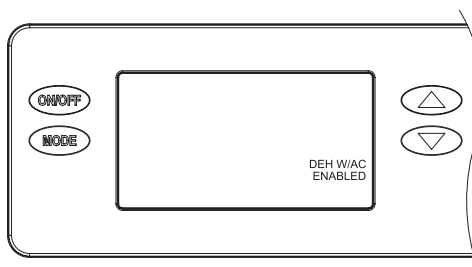
SETTING UP EXTERNAL CONTROL

If wiring to an external control (see page 13 for details) press the ▲ or ▼ button to **ENABLE**.

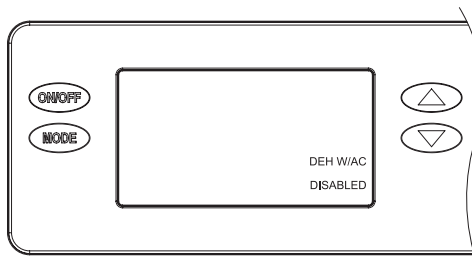


ENABLING DEH W/AC

To allow dehumidification during active air conditioning, select **ENABLED** and press the MODE button.

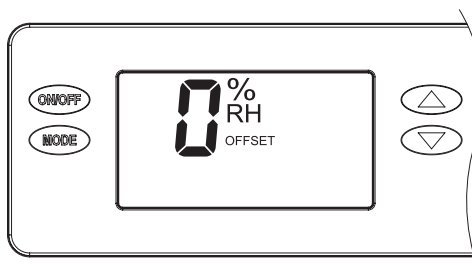


To disable dehumidification when the air conditioning is on, select **DISABLED** and press the MODE button. This option may be preferable when the air conditioning system has difficulty maintaining the desired set point.



APPLYING AN RH OFFSET

An offset can be applied to the onboard humidity reading to avoid discrepancies with other humidity-measuring devices in the home. Use the ▲ or ▼ button to select an offset from -5% to 5%. Press the MODE button to exit the installer setup screens.

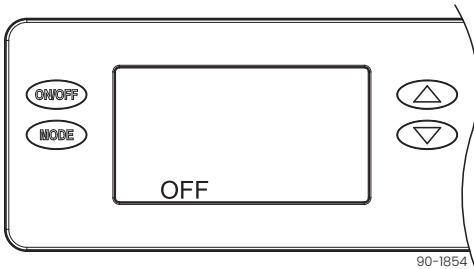


INSTALLER TEST MODE

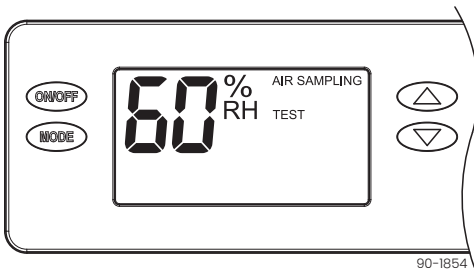
If everything is properly wired, the dehumidifier and all of the wired components will turn on and off during Installer Test Mode to demonstrate that all are properly operating. Installer Test Mode lasts for four (4) minutes. If the ON/OFF button is pressed during test mode, the dehumidifier will exit Installer Test Mode and return to the **OFF** screen.

DEHUMIDIFICATION ONLY

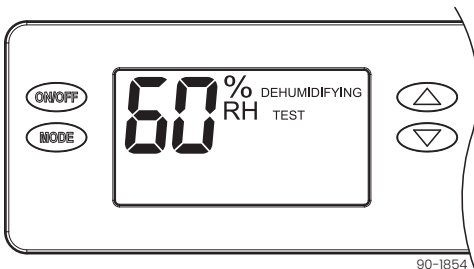
If the dehumidifier is not already OFF, press the ON/OFF button to turn it off.



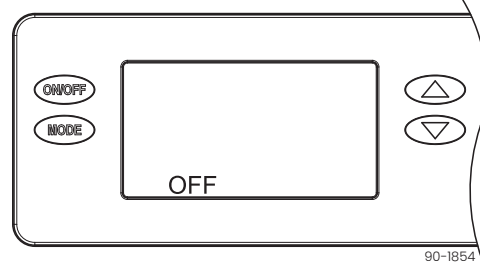
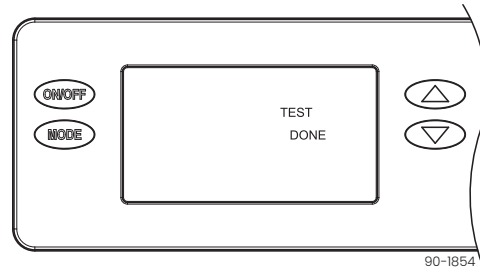
Press and hold the ON/OFF and MODE buttons for 3 seconds. The measured humidity, **AIR SAMPLING** and **TEST** will show on the display. If wired to the HVAC system, the HVAC blower will turn on and if there is/are damper(s) wired to the DEH DAMPER terminals of the control, the damper(s) will energize.



After three (3) minutes the dehumidifier compressor will turn on and **DEHUMIDIFYING** will replace **AIR SAMPLING** on the control screen.

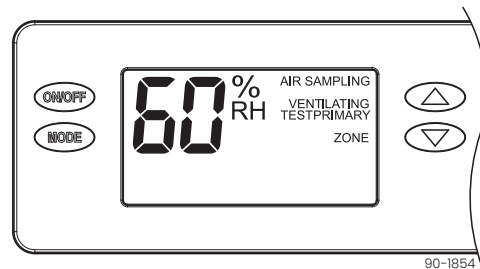


After one minute of compressor operation, all outputs will turn off and **DONE** will blink for 3 seconds and then return to the **OFF** screen.

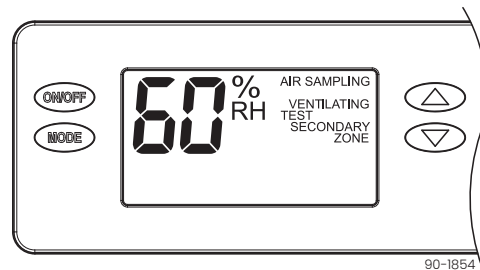


ZONING AND/OR VENTILATION

If the dehumidifier has been set up for ventilation, **VENTILATING** will appear on the display throughout Installer Test Mode, and the ventilation damper will be energized.



If the dehumidifier has been set up for zoning, **PRIMARY ZONE** will show on the display for the first minute of dehumidifier blower operation. After one minute, **SECONDARY ZONE** will show on the display and the zone dampers will de-energize.



STARTING UP THE UNIT AND SEQUENCE OF OPERATION

Ensure unit is plugged in and if equipped use the ON/OFF power switch near the power cord to apply power to the dehumidifier.

USING THE DEHUMIDIFIER CONTROL ONLY

1. Press the ON/OFF button to turn the dehumidifier control ON. The display will show the current humidity setting, and the dehumidifier blower and HVAC blower (if wired to the HVAC system) will turn on to start sampling.

The setting will be replaced by the measured humidity and the words **AIR SAMPLING** appear on the display.
2. Use the ▲ or ▼ button to adjust the humidity setting as desired. The recommended initial setting is between 55% and 59%.
3. After three (3) minutes of sampling, the measured humidity will be compared to the setting:
 - a. If the humidity is above the setting, the dehumidifier compressor turns on and the words **AIR SAMPLING** will be replaced by the word **DEHUMIDIFYING**. The compressor remains on until the measured humidity falls 3% RH below the setting.
 - b. If the measured humidity is below the setting, the blowers turn off and the display returns to showing the RH setting.
4. The dehumidifier will sample again every 60 minutes, or at any time if the humidity setting is lowered.

USING A MODEL 76 AS A REMOTE CONTROL

1. Press the ON/OFF button to turn the dehumidifier control ON. The display will show the word **REMOTE** to indicate that a remote control is to be used to control the dehumidifier.
2. At the Model 76, press the ON button; the Model 76 will display the RH measured at the dehumidifier, and the dehumidifier blower will turn on to start sampling the air.
3. Use the ▲ or ▼ button on the Model 76 to adjust the dryness level as desired. The dryness levels range from 1 to 7, with 1 being least dry and 7 being most dry; the recommended initial setting is 3.
4. After three (3) minutes of sampling, the measured humidity will be compared to the setting:
 - a. If the humidity is above the setting, the dehumidifier compressor turns on and the word **ON** flashes on the Model 76 display.
 - b. If the measured humidity is below the setting, the dehumidifier blower turns off.
5. The dehumidifier will sample again every 60 minutes, or at any time if the dryness level is increased.

USING AN EXTERNAL CONTROL

1. Press the ON/OFF button to turn the dehumidifier control ON. The display will show the word **EXTERNAL** to indicate that an external control is to be used to control the dehumidifier.
2. At the external control, initiate a dehumidification demand. Refer to the literature provided with the external control. The dehumidifier fan and compressor, and the HVAC fan (if wired to do so) will turn on and the word **DEHUMIDIFYING** will appear on the display of the dehumidifier.

NOTE: When using an external control, there is a three-minute delay after power-up (i.e., ON/OFF power switch is turned ON with unit plugged in) before the dehumidifier will respond to an external control. This prevents unanticipated, early start-up after power is applied.
3. Discontinue the demand at the external control; the dehumidifier and HVAC fan will turn off.

TWO-ZONE OPERATION

The Primary Zone operates as listed for using the dehumidifier control or an external control. **PRIMARY ZONE** shows on the display when operating.

The Secondary Zone uses the humidity setting on the dehumidifier control. During Secondary Zone operation, the installed dampers are de-energized and the HVAC blower (if on) stops. **SECONDARY ZONE** shows on the display when operating.

The Secondary Zone is sampled immediately after the Primary Zone has finished sampling, or if there is a call for dehumidification from the Primary Zone, immediately after the call has been satisfied. When an external control is installed, the Secondary Zone will be sampled once per hour if there has not been a call for dehumidification from the Primary Zone.

TROUBLESHOOTING

Technical support is available Monday through Friday 7:00 a.m. to 5:00 p.m. CST at 800.334.6011. Use the guides on the following pages to identify and correct system faults. Contact Technical Support before replacing the unit or any components and for additional troubleshooting.

DIAGNOSTIC CODES

When an error occurs, the Diagnostic Code along with **SERVICE REQUIRED** will be displayed on the user interface screen.

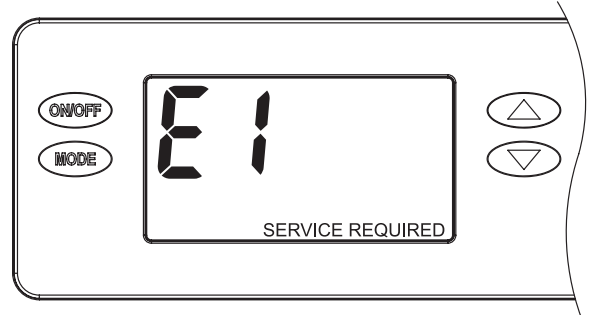


TABLE 1: DIAGNOSTIC CODES

Diagnostic Code	Failure Mode	Action	Reset
E1	Internal Humidity or Temperature Sensor Open or Shorted	1. Cycle power to clear error code. Unplug the unit from the outlet or switch the ON/OFF power switch (if applicable) to the OFF position for at least 10 seconds before restoring power. 2. If error code reoccurs, replace User Interface, Part #5445.	Cycle Power
E2	High Refrigeration Pressure	1. Verify that the fan works, the backflow damper swings freely, and there is no blocked or restricted ductwork. 2. If the fault persists, call Technical Support.	Cycle Power
E3	Model 76 Remote Control Communication Loss	1. Check connections between Model 76 and dehumidifier user interface. Terminals should be fully inserted and secured in the user interface and Model 76 control terminals. 2. If connections are correct and secure, turn off the dehumidifier and remove the Model 76. Use a short section of 4-wire cable to reconnect the Model 76 to the user interface. Turn the dehumidifier back on and increase the dryness level setting on the Model 76. If the dehumidifier turns on, a problem exists with the wiring between the dehumidifier and control. 3. If the dehumidifier does not turn on, call Technical Support.	Self-Correcting
E4	Insufficient Capacity	1. Check the frost sensor connection at the power board. The terminal should be fully seated on the power board pins. 2. Remove the side access panel and verify that the sensor is secured to the suction line. 3. If the sensor is connected and secured to the refrigeration line, proceed to the next step. 4. Reset the fault by cycling power to the dehumidifier. 5. Turn the humidity setting down (below room/home humidity level) to make a dehumidification call. 6. Allow the fan and compressor to run for approximately 10-15 minutes and then enter diagnostic test mode by simultaneously pressing the ▲ button and MODE button for 3 seconds. The LCD will display: • the temperature measured by the internal sensor while also displaying the words AIR SAMPLING and ON • the humidity measured by the internal sensor while also displaying %RH and the word ON • the frost sensor temperature while also displaying the word ON. Scroll through these values and by using the ▲ or ▼ button. 7. Record values and call Technical Support.	Cycle Power
E5	High Temperature Thermistor Failure	1. Check the high temperature sensor connection at the power board. The terminal should be fully seated on the power board pins. 2. Remove the side access panel and verify the sensor is not damaged and connected to the refrigeration line coming from the compressor. 3. If the sensor is connected and secured to the refrigeration line, it may need to be replaced with Part #5456 – contact Technical Support to confirm.	Cycle Power

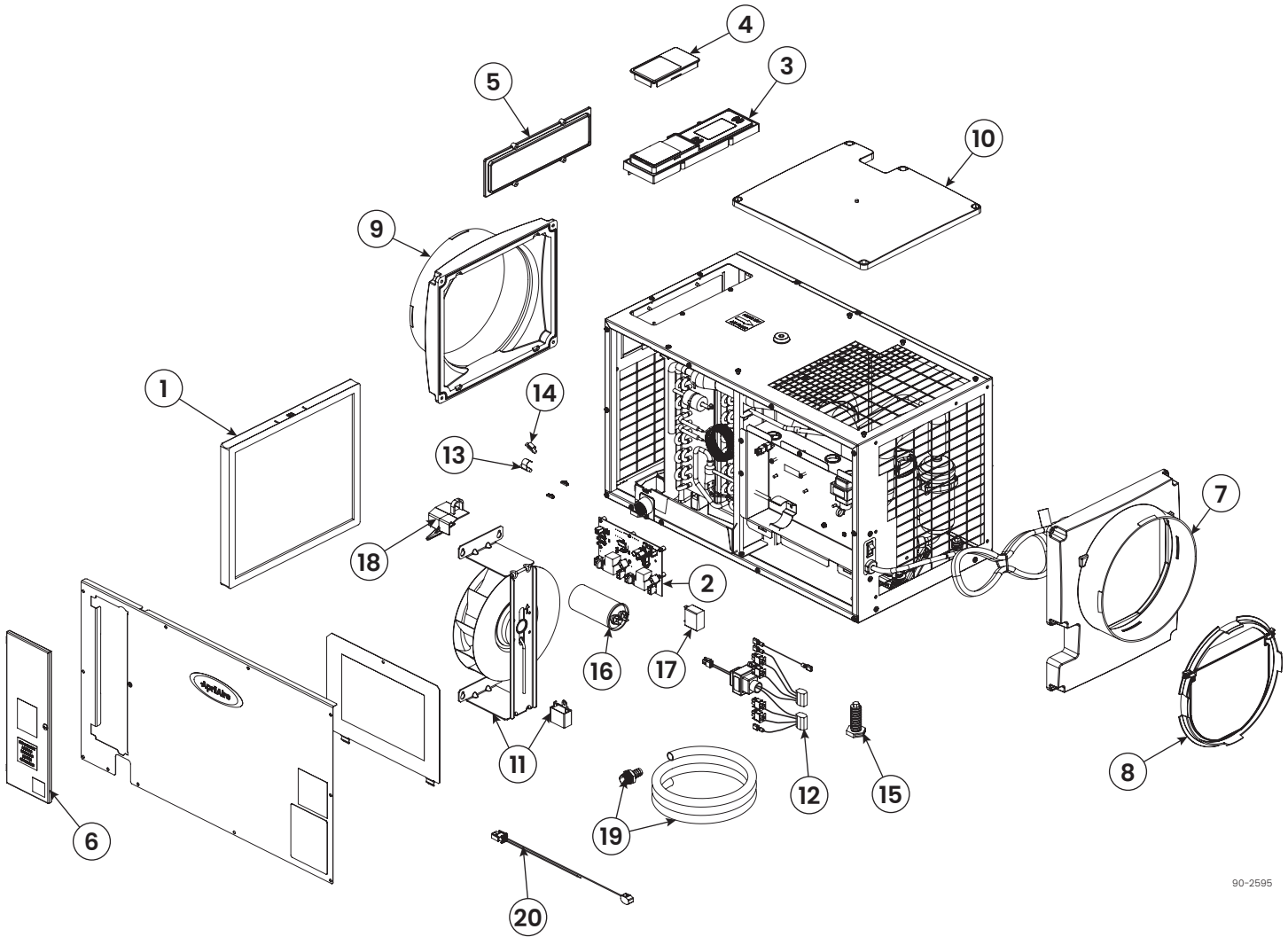
TABLE 1: DIAGNOSTIC CODES

Diagnostic Code	Failure Mode	Action	Reset														
E6	Low Temperature Thermistor Failure	1. Check the low temperature sensor connection at the power board. 2. Remove the side access panel and verify the sensor is not damaged and connected to the suction line. 3. If the sensor is connected and secured to the refrigeration line, it may need to be replaced with Part #5455 – contact Technical Support to confirm.	Cycle Power														
E7	Float Switch Open	1. Empty the condensate pan. 2. Check the float switch connection at the user interface. 3. If not using a float switch, verify jumper is between float switch terminals on dehumidifier user interface. 4. If the problem persists, replace the float switch.	Self-Correcting														
E8	Inlet Air Temperature Out of 50°F–104°F Range, or Dew Point Below 40°F	1. Verify all ductwork is properly sealed. 2. Check for air leakage that might affect the temperature or RH of the incoming air. 3. If the air temperature is in range and the dew point is above 40°F, contact Technical Support.	Self-Correcting														
E9	Outdoor Temperature Sensor Open or Shorted	1. Check the sensor connection at the power board. 2. Remove the wires from the terminals and measure the resistance. A short circuit will have a resistance very close to 0 Ohms and an open circuit will have a very high resistance. Use the Ohms chart at right to approximate the resistance based on outdoor temperature. 3. If the sensor is not reading correctly, replace the sensor, Part #8052. <table><tr><th>Outdoor Temperature</th><th>Resistance</th></tr><tr><td>0°F</td><td>84,500 Ohms</td></tr><tr><td>20°F</td><td>46,000 Ohms</td></tr><tr><td>40°F</td><td>26,000 Ohms</td></tr><tr><td>60°F</td><td>15,500 Ohms</td></tr><tr><td>80°F</td><td>9,500 Ohms</td></tr><tr><td>100°F</td><td>6,000 Ohms</td></tr></table>	Outdoor Temperature	Resistance	0°F	84,500 Ohms	20°F	46,000 Ohms	40°F	26,000 Ohms	60°F	15,500 Ohms	80°F	9,500 Ohms	100°F	6,000 Ohms	Self-Correcting
Outdoor Temperature	Resistance																
0°F	84,500 Ohms																
20°F	46,000 Ohms																
40°F	26,000 Ohms																
60°F	15,500 Ohms																
80°F	9,500 Ohms																
100°F	6,000 Ohms																

TABLE 2: TROUBLESHOOTING GUIDE

Symptom	Failure Mode	Action															
Dehumidifier does not turn on/run.	No power to unit.	• Check that the dehumidifier is plugged in. • Check that the power switch is turned ON (if equipped). • Check that the user interface is turned ON. • Check that the circuit breaker has not tripped.															
Dehumidifier blower is running but with little or no airflow.	Pressure drop across dehumidifier is higher than 0.4" w.c. for Model E080 or 0.6" w.c. for Model E100/E100H.	• Check dehumidifier air filter and wash or replace. • Check for blocked ductwork and clear. • Verify that the outlet collar with backflow damper is installed on the outlet side of the dehumidifier. • Check if backflow damper is blocked or stuck and remove obstruction.															
Dehumidifier blower is running but compressor is not.	Float Switch open (E7 appears on display).	• If float switch is installed, check connections at user interface and empty the condensate pan. • If no float switch is installed, check that the jumper is installed at the float switch terminals on the user interface.															
	Unit is defrosting.	• Frosting occurs when the incoming air is cool and dry, normally during Spring or Fall, or the airflow is restricted. Frosting due to cold/dry conditions is a normal part of operation and DEFROSTING will show on the display. If it is not cool and dry, look for blocked ductwork or a dirty filter.															
	Inlet air temperature is outside of the 50°F–104°F range or the dew point is below 40°F and there is a demand for dehumidification.	• Verify all ductwork is properly sealed. Dehumidification will restart by itself when the incoming air temperature is within range and the dew point is above 40°F. E8 appears on the display when inlet air conditions prevent operation.															
When zoned, the dehumidifier damper does not open in INSTALLER TEST mode.	Incorrect damper wiring or bad connection.	• Verify wiring between dampers and 24 VAC transformer. • If wired for Two Zone operation, verify that 24 VAC transformer is 40 VA minimum. • Check all wiring connections between dampers and user interface. • Verify the normally closed dampers are in the Primary Zone ductwork and the normally open dampers are in the Secondary Zone ductwork.															
The ventilation damper does not open when the HVAC fan is active.	Cycle time has been met.	• The damper will not open if the ventilation time has already been met.															
	Incorrect transformer wiring.	• Verify wiring between damper, VENT terminal, and 24 VAC transformer. These should be wired in series. • Verify that 24 VAC transformer is 10 VA minimum and voltage is present.															
	ODT error or outdoor air outside of ODT range.	• Check that the ODT is wired correctly to the dehumidifier user interface and connections are secure. • Check that the ODT is installed in the outdoor air intake according to the setup specified in VENTILATION on page 14. • Remove the ODT leads from the dehumidifier user interface and check the resistance. Compare the reading with the chart on the right.	<table><tr><th>Outdoor Temperature</th><th>Resistance</th></tr><tr><td>0°F</td><td>84,500 Ohms</td></tr><tr><td>20°F</td><td>46,000 Ohms</td></tr><tr><td>40°F</td><td>26,000 Ohms</td></tr><tr><td>60°F</td><td>15,500 Ohms</td></tr><tr><td>80°F</td><td>9,500 Ohms</td></tr><tr><td>100°F</td><td>6,000 Ohms</td></tr></table>	Outdoor Temperature	Resistance	0°F	84,500 Ohms	20°F	46,000 Ohms	40°F	26,000 Ohms	60°F	15,500 Ohms	80°F	9,500 Ohms	100°F	6,000 Ohms
			Outdoor Temperature	Resistance													
0°F			84,500 Ohms														
20°F			46,000 Ohms														
40°F			26,000 Ohms														
60°F			15,500 Ohms														
80°F	9,500 Ohms																
100°F	6,000 Ohms																
Dehumidifier is not draining properly.	Drain line blocked or unit not level.	• Verify that the unit is level. • Check the drain line blockages and check for a continuous downward slope. • Verify presence and condition of drain cover insert. See MAINTENANCE on page 5 for cleaning procedure, or replace with Part #5885 if missing or damaged.															
The HVAC fan turns on unexpectedly.	Dehumidifier is sampling or ventilation in progress.	• The dehumidifier will turn on the HVAC fan during air sampling or as needed to meet the ventilation time.															
Dehumidifier is producing hot air.	Normal function.	• Air is reheated across the condenser coil, resulting in a temperature rise between inlet and outlet.															

SERVICE PARTS



90-2595

No.	Part Description	Part No.
1	EZK Filter, 13.5" x 11.875" x 0.875"	5881
2	Internal Control Board	5444
3	User Interface Assembly	5445
4	Wiring Access Door	5446
5	Hole Cover, UI Ctrl	5447
6	Door, Filter Access	5882
7	Outlet Duct Panel	5449
8	Backflow Damper, 10"	5450
9	Inlet Duct Panel	5451
10	Cover, Outlet	5452
11	Fan, 80pt Deh, with 6MFD Capacitor	5883
	Fan, 100pt Deh, with 12MFD Capacitor	5886
12	Wire Harness, Power	5884
	Wire Harness, Power, Deh w/ Vent*	5888

No.	Part Description	Part No.
13	Sensor, Low Temperature	5455
14	Sensor, High Temperature	5456
15	Leveling Foot (not included with E100C)	5457
16	Capacitor, Run, 50µF	5594
17	Capacitor, 6MFD, 250VAC, 80p	5582
	Capacitor, 12MFD, 450VAC, 100p	5468
18	Drain Insert	5885
19	Drain Tube + Fitting	5692
20	8190FF/E100V Internal Wiring Harnesses (not included)	5914
NOT SHOWN		
8190FF/E100V External Wiring Harnesses		5887
Casters (E100C only)		70000014

*Compatible with Model E100V and units equipped with the 8190FF vent kit.

LIMITED WARRANTY

Terms of Coverage

Your AprilAire® Dehumidifier is expressly warranted to be free from defects in materials or workmanship for five (5) years from date of purchase.

What Is Covered

The exclusive obligation of AprilAire under this Limited Warranty shall be, at the sole discretion of AprilAire, to supply, without charge, a replacement for any component or product which is found to be defective. A defective part will be replaced pursuant to this Limited Warranty with a genuine AprilAire part. A defective product will be replaced pursuant to this Limited Warranty with a new AprilAire product of equal or similar features and functionality if the original product has been discontinued or is no longer available.

Not Covered by the Limited Warranty

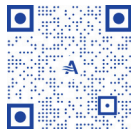
- Consumable or maintenance products, such as, but not limited to: Air Filters, Evaporative Humidifier Water Panels, Steam Canisters, or Steam Humidifier Electrode Wires.
- Products purchased from third parties that were previously used, such as previously-used products purchased from eBay, similar third party/auction sites, or individuals selling used products.
- Labor charges, shipping costs, removal fees, service fees, or reinstallation costs.
- Materials furnished by the installer.
- Damage caused by misuse, abuse, improper installation, or failing to install, use, or maintain the product in accordance with the instructions provided.
- Damage to HVAC equipment caused by improper installation(s) or misapplication installation(s).
- Modifications, changes, repurposing, or alterations to the AprilAire product.
- Extended warranties or satisfaction guarantees offered by third parties.
- Cosmetic damage or normal wear and tear, including, but not limited to: scratches, peeling finish, or dents that do not impede the mechanical functionality of the product.
- Damage caused by acts of nature, including but not limited to: fire, collision, flood, wind, power surge, lightning strike, or mold.
- Damage caused during transit.
- Damage caused during installation due to failure to follow local, state, or federal laws, statutes, codes, or ordinances.
- Damage caused by defects in materials furnished by the installer.

Limit of Liability

IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL BE LIMITED IN DURATION TO THE AFOREMENTIONED EXPRESS WARRANTY PERIOD. APRILAIRE LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, OTHER THAN DAMAGES FOR PERSONAL INJURIES, RESULTING FROM ANY BREACH OF THE AFOREMENTIONED IMPLIED WARRANTIES OR THE ABOVE LIMITED WARRANTY IS EXPRESSLY EXCLUDED. THIS LIMITED WARRANTY IS VOID IF DEFECT(S) RESULT(S) FROM FAILURE TO INSTALL THE PRODUCT ACCORDING TO THE APRILAIRE INSTALLATION INSTRUCTIONS. IF THE LIMITED WARRANTY IS VOID DUE TO MISAPPLICATION OR IMPROPER INSTALLATION, ALL DISCLAIMERS OF IMPLIED WARRANTIES SHALL BE EFFECTIVE UPON INSTALLATION.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitation(s) may not apply to your situation. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Register Your AprilAire® Product



Thank you for choosing AprilAire. Register your product at aprilaire.com/warranty to receive important updates and notifications, and to streamline the process in the unlikely event you file a claim.

Your warranty registration information will not be sold or shared outside of this company.

Make a Warranty Claim

For questions regarding the Limited Warranty or to initiate a claim, contact AprilAire Customer Service at 1.800.334.6011 Monday through Friday, 7:00 a.m. to 5:00 p.m. Central Time.

At the sole discretion of AprilAire, you may be required to: return the product not later than thirty (30) days after the warranty period to the place of purchase or (if directed) to AprilAire, contact a professional contractor to provide warranty service, submit a product for testing related to a warranty claim, and/or send pictures of the original product with the serial number (if applicable) to AprilAire Technical Support for inspection as a condition to reviewing a claim and/or receiving a replacement product under this Limited Warranty.

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