

⚠ 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 outlet screen. The screen is 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 display or circuit board. Chemicals can damage components.

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, 7A Operating Current @ 80°F/60% RH
Unit equipped with 8 ft. grounded power cord
15 Amp circuit required

Airflow:	ΔP ("w.c.)	Airflow (cfm)
	0.0	230
	0.2	220
	0.4	190

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)

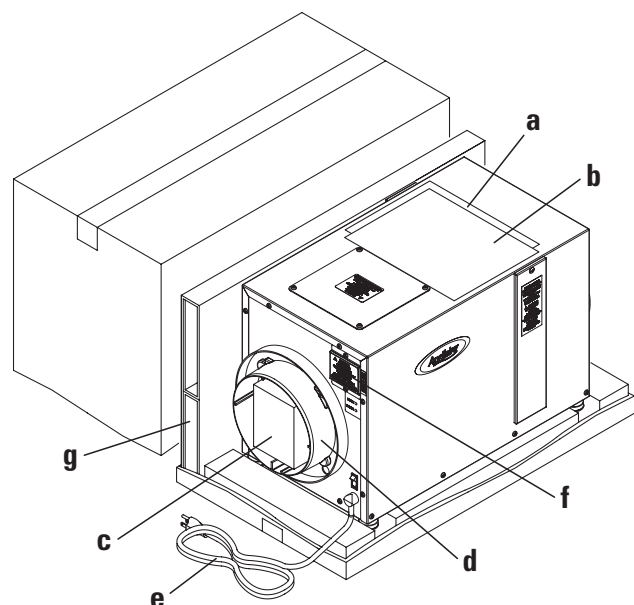
Filter: MERV 8, washable

UNPACKING AND CONTENTS

Do not tip unit to remove from carton.

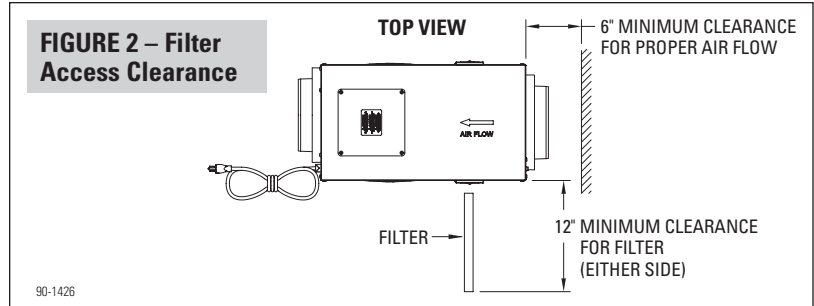
- Open carton completely using cut line shown along bottom perimeter of carton.
- Remove all cardboard inner pack (top edges and duct collars).
- See **Figure 1** for opening view and contents.
 - Installation Manual
 - Owner's Manual
 - Model 76 Control
 - Outlet Collar with Back Flow Damper
 - 8 ft. Grounded Power Cord
 - Wiring Access Panel
 - Condensate Pan

FIGURE 1 – Carton Opening & Contents



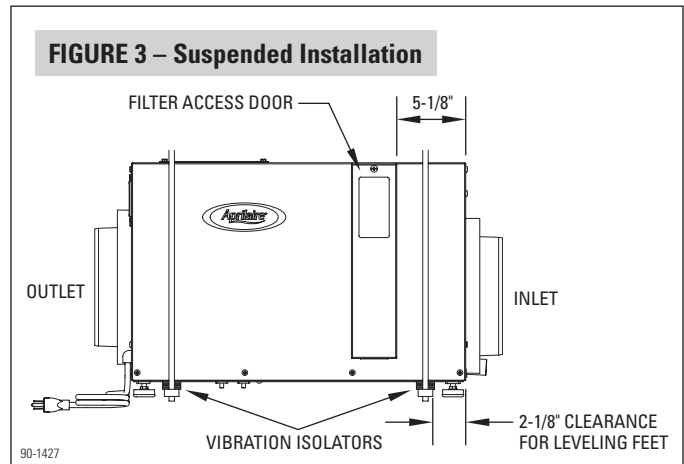
LOCATION CONSIDERATIONS

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.
4. **Filter Access:** Allow for 12" clearance on one side of the unit for removal of filter. (**Figure 2**)
5. **Inlet:** If inlet is not ducted, a minimum of 6" of open space is required from the inlet panel to an adjacent surface.



SUSPENDED INSTALLATION

If hanging the unit, use 1/4" (minimum) 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 3**. 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.



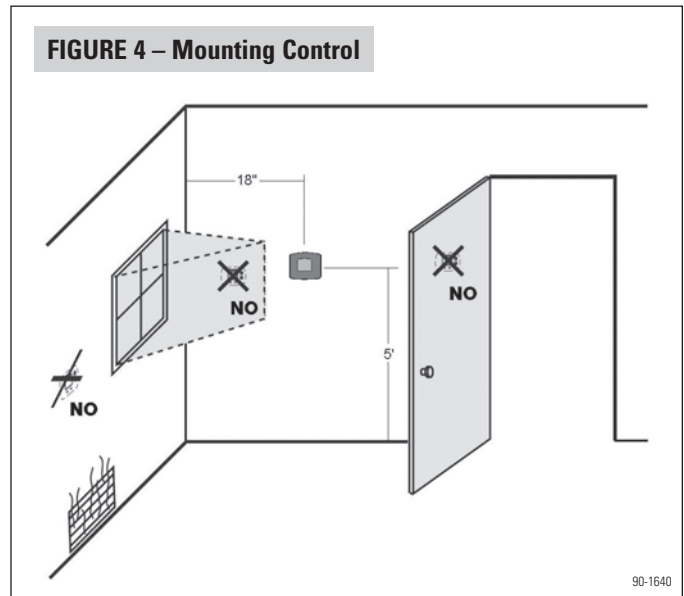
DEHUMIDIFIER CONTROL LOCATION

MOUNT CONTROL

- In an area the homeowner wants to monitor and control moisture levels.
- On an interior wall.
- Approximately 5' off the floor.
- At least 18" from an outside wall.

DO NOT MOUNT CONTROL

- **In the flow of a supply register.**
- Behind doors, in corners or other dead air spaces.
- In direct sunlight, near lighting fixtures, or other appliances that give off heat.
- On an outside or unconditioned area wall.
- In stairwells or near outside doors.
- On a wall with concealed pipes or ductwork.



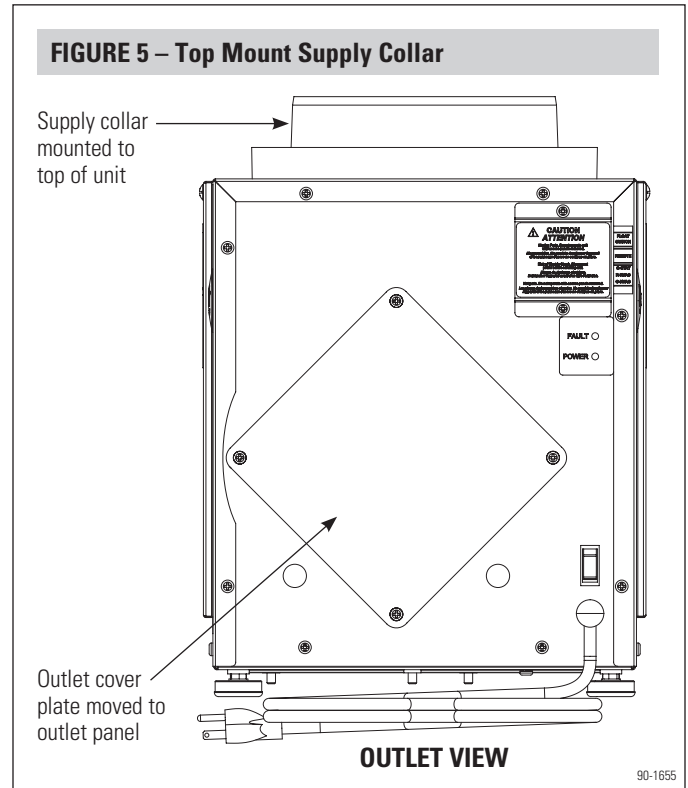
MECHANICAL INSTALLATION

SUPPLY COLLAR

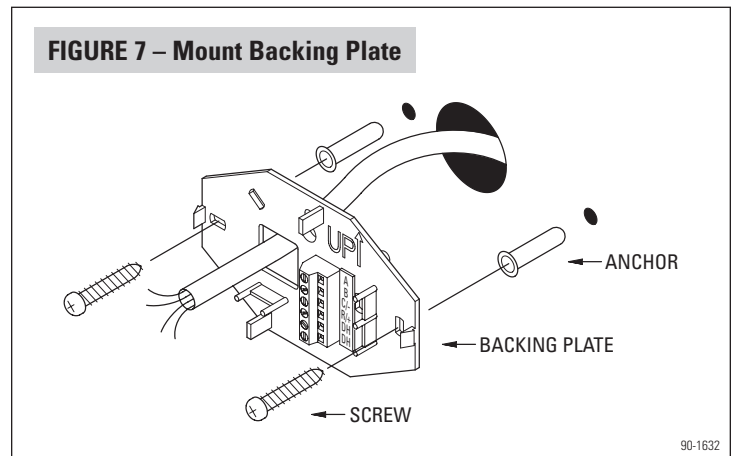
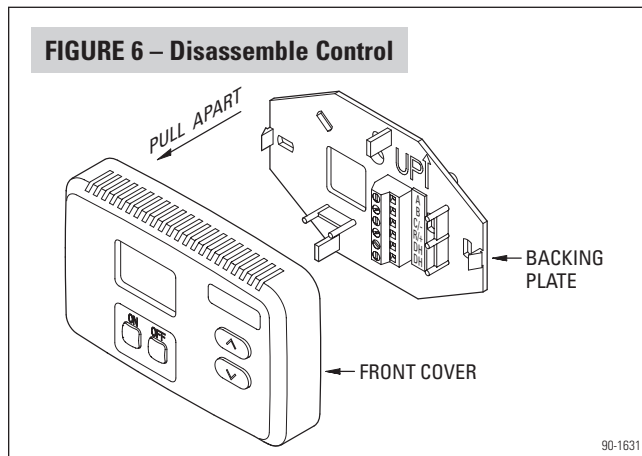
The dehumidifier can be installed as shipped, with the supply collar on the outlet panel, or if space is restricted, the supply collar can be relocated to the top of the unit.

TOP MOUNT SUPPLY COLLAR (FIGURE 5)

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.



MOUNT CONTROL



Required Components

18 – 24 gauge wire (field supplied) – 4 wires required, run new cable as needed.

(2) #8 x 1-1/2" mounting screws (supplied)

(2) Anchors (supplied)

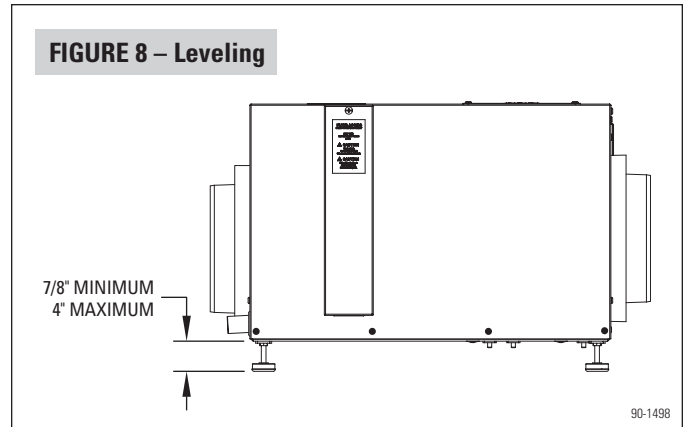
1. Level the backing plate on the wall and mark the mounting holes and wire access location on the wall.
2. Drill two 3/16" mounting holes and a 3/4" wire access hole. See **Figure 7**.
3. Install the drywall anchors flush with the wall surface. **Note:** Mounting holes on the backing plate are designed to fit on a horizontal J-box.
4. Run a 4-wire cable from the dehumidifier to the wall mount location and through the square hole in the backing plate.
5. Secure the backing plate to the wall using the two #8 x 1-1/2" screws.
6. Connect wires to the **C/-**, **R/+**, and both **DH** terminals on the backing plate. **Important:** Note wire colors used for each terminal and match with connections at the dehumidifier (see **WIRING** on page 6).
7. Push excess cable into the wire access hole and fill the hole with insulation. **Note:** Failure to seal the hole can cause drafts to enter the control and affect sensing accuracy.

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 the supplied condensate pan with a field supplied float switch is required. See **Condensate Pan and Float Switch** section for installation and wiring instructions.

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. See **Figure 8**.

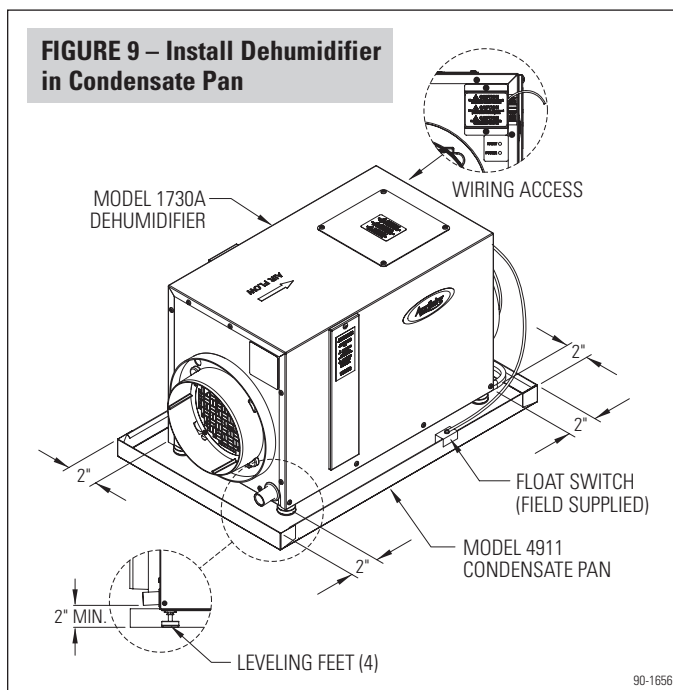


CONDENSATE PAN AND FLOAT SWITCH

If the dehumidifier is installed in an attic or an area requiring leak protection, the unit must be placed the supplied condensate pan with a field supplied 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. The compressor is disabled when the float switch is open.

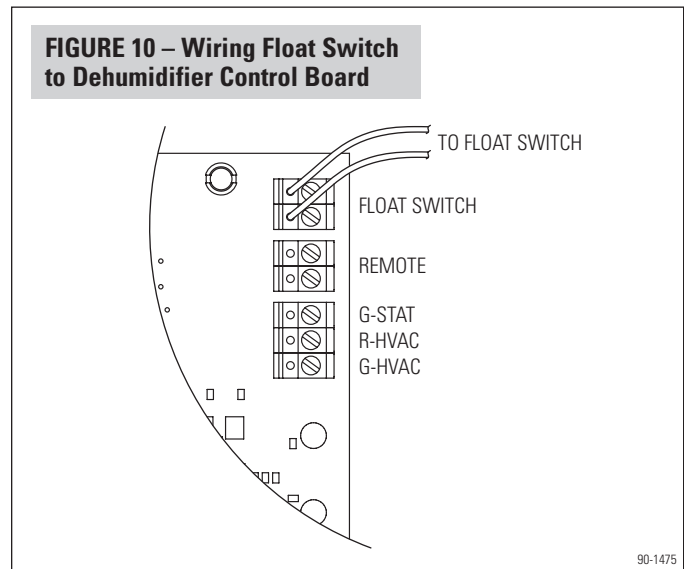
CONDENSATE PAN INSTALLATION

1. Raise the unit so that the bottom of the dehumidifier drain tube is at least 2" off the floor (see **Figure 9**) and so that the dehumidifier is level front to back and side to side.
2. Install the dehumidifier so that all four sides of the dehumidifier and the drain tube are inside the condensate pan (see **Figure 9**).



FLOAT SWITCH INSTALLATION AND WIRING

1. Install a float switch (field supplied) on any side of the condensate pan. Refer to the instructions provided with the float switch for proper installation.
2. The wires from the float switch are to be routed through the wiring access panel in the back of the dehumidifier (see **Figure 9**). Remove the wiring access panel and pull the FLOAT SWITCH terminal block off the circuit board. Remove the float switch jumper wire and wire the float switch to the FLOAT SWITCH terminals. Plug the terminal block back into the circuit board (see **Figure 10**).



DUCTWORK INSTALLATION

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.

DUCTED INSTALLATION

- Move supply collar to the desired location, if necessary. (See **Supply Collar** in **MECHANICAL INSTALLATION** 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.

ATTIC INSTALLATIONS

FIGURE 11 – Preferred Attic Installation

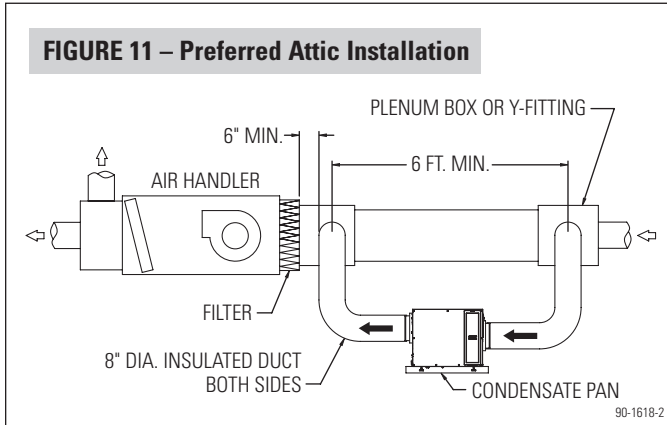
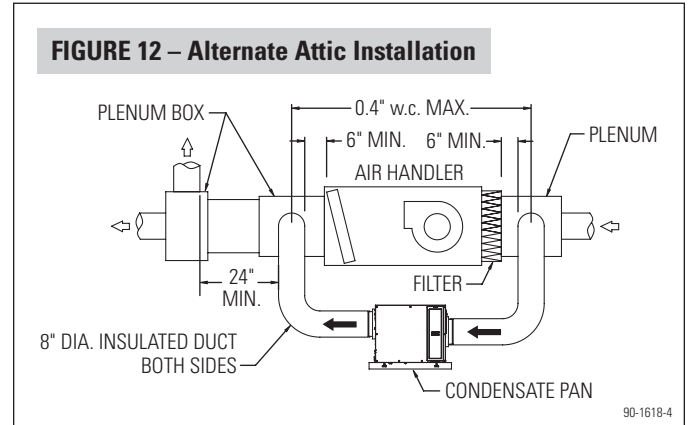


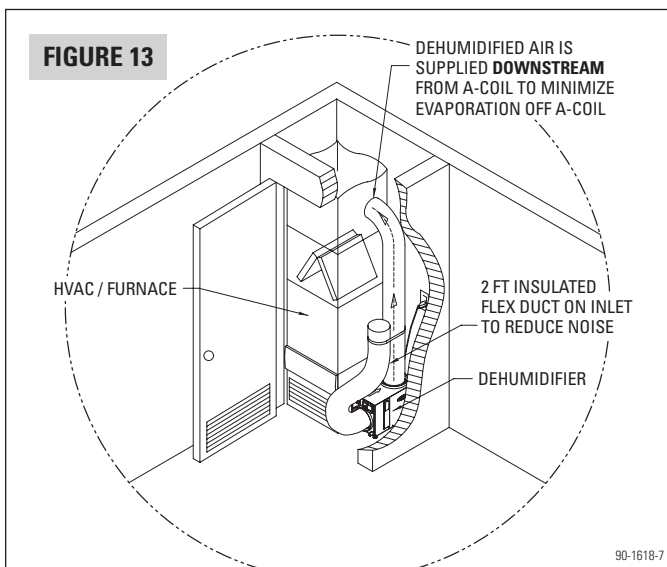
FIGURE 12 – Alternate Attic Installation



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.

CLOSET INSTALLATION

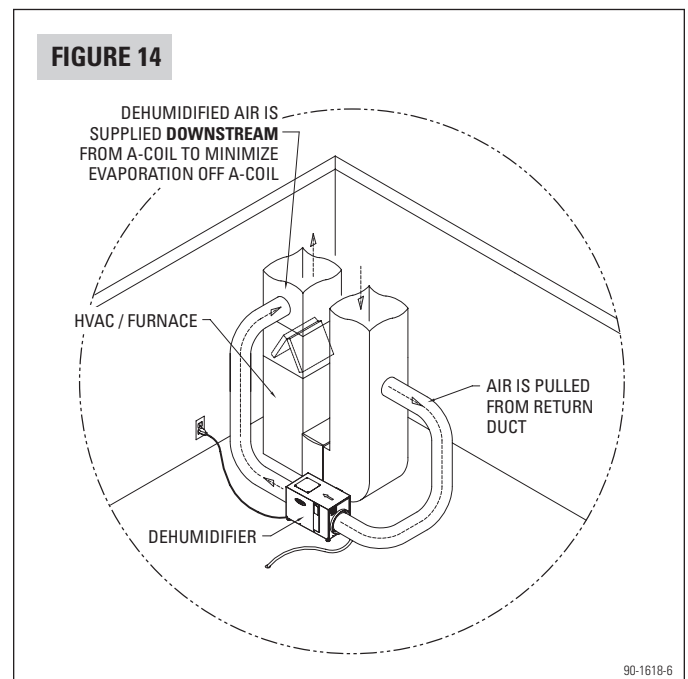
FIGURE 13



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

BASEMENT INSTALLATION

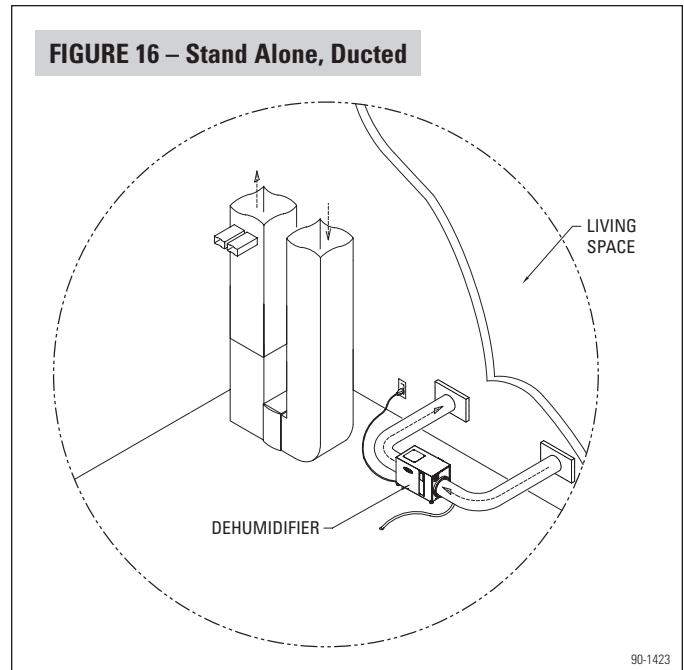
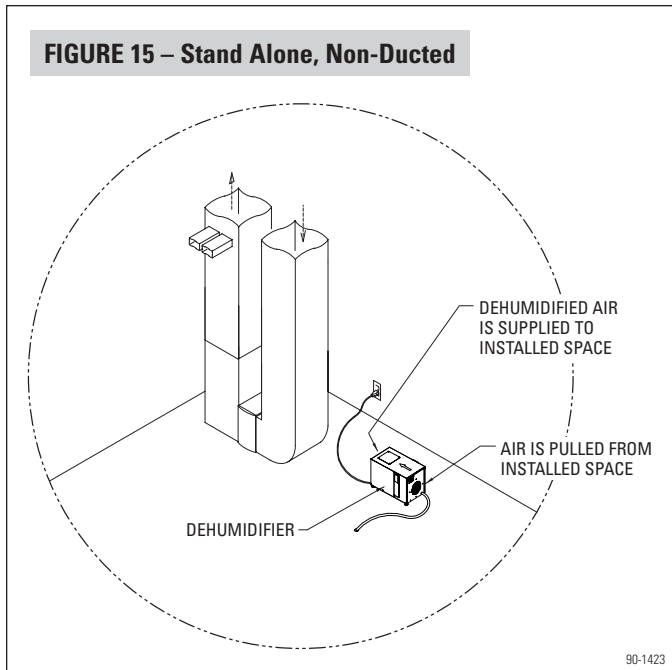
FIGURE 14



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 15**.

- 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 16**.



WIRING

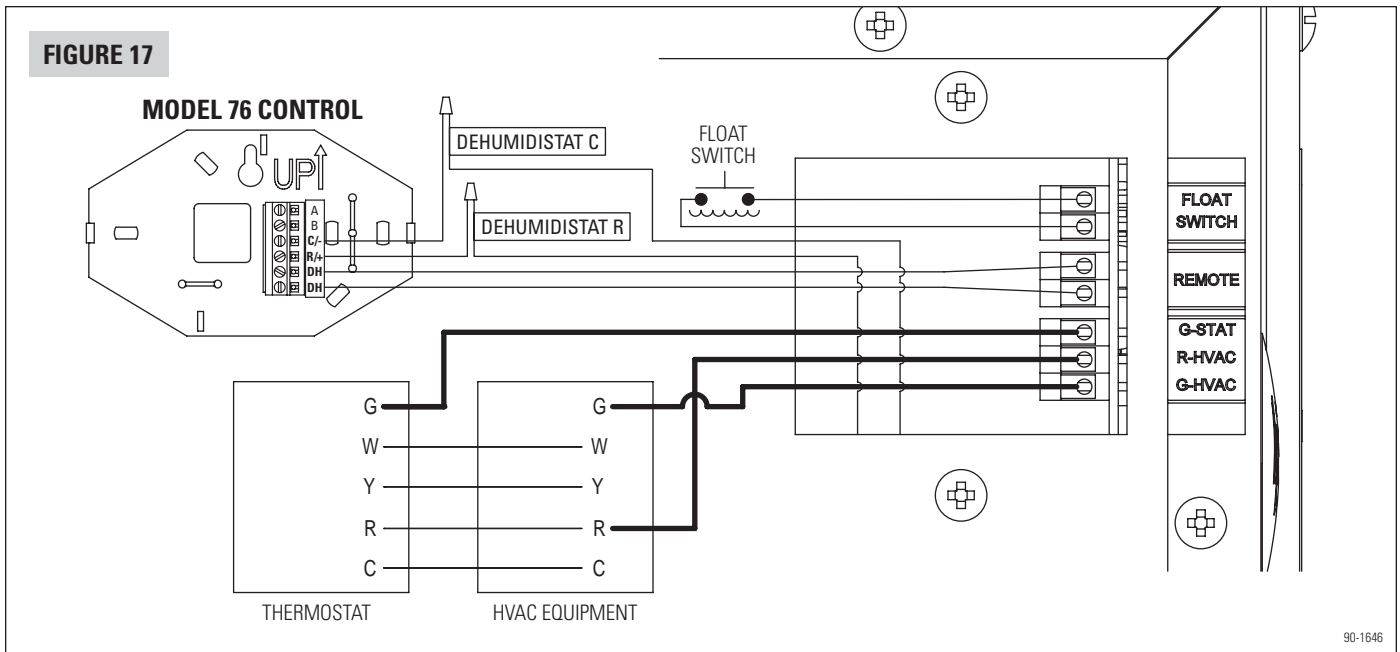
DUCTED INSTALLATIONS WITH A FLOAT SWITCH (ATTIC, CLOSET, ETC.)

Required Components

18-24 gauge, 3-wire stranded cable

1. **Disconnect power to the dehumidifier and HVAC system.**
2. Remove the wiring access panel on the dehumidifier outlet panel.
3. Run a 3-wire cable from the dehumidifier to the furnace/air handler.
4. At the HVAC equipment, disconnect the thermostat wire from the **G** terminal. Wire nut this wire to one of the wires (**G-STAT**) from the 3-wire cable. Connect the remaining two wires to the HVAC **R** terminal (**R-HVAC**) and the HVAC **G** terminal (**G-HVAC**).
5. Unplug the **G-STAT**, **R-HVAC**, and **G-HVAC** terminal block from the circuit board. Make the connections shown in **Figure 17**.
6. Plug the terminal block back into the circuit board.
7. Unplug the **REMOTE** terminal block from the circuit board. Connect the **DH** wires from the Model 76 to the **REMOTE** terminals as shown in **Figure 17**.
8. Plug the terminal block back into the circuit board.
9. Pull the **Dehumidistat C** and **Dehumidistat R** wires out of the wiring access panel and remove the wire nuts.
10. Using the wire nuts, make the final two connections with the 4-wire cable to **C/-** and **R/+** as shown in **Figure 17**.
11. Remove the **FLOAT SWITCH** terminal block from the circuit board. Make the connections shown in **Figure 17**.
12. Replace the wiring access panel on the unit.
13. Snap the Model 76 front cover on the backing plate. The 6-pin terminal aligns with the terminal block receptacle on the backing plate.
14. Proceed to **SYSTEM CHECKOUT** on page 9.

FIGURE 17



90-1646

INSTALLATIONS WITHOUT A FLOAT SWITCH (BASEMENT, ETC.)

Required Components

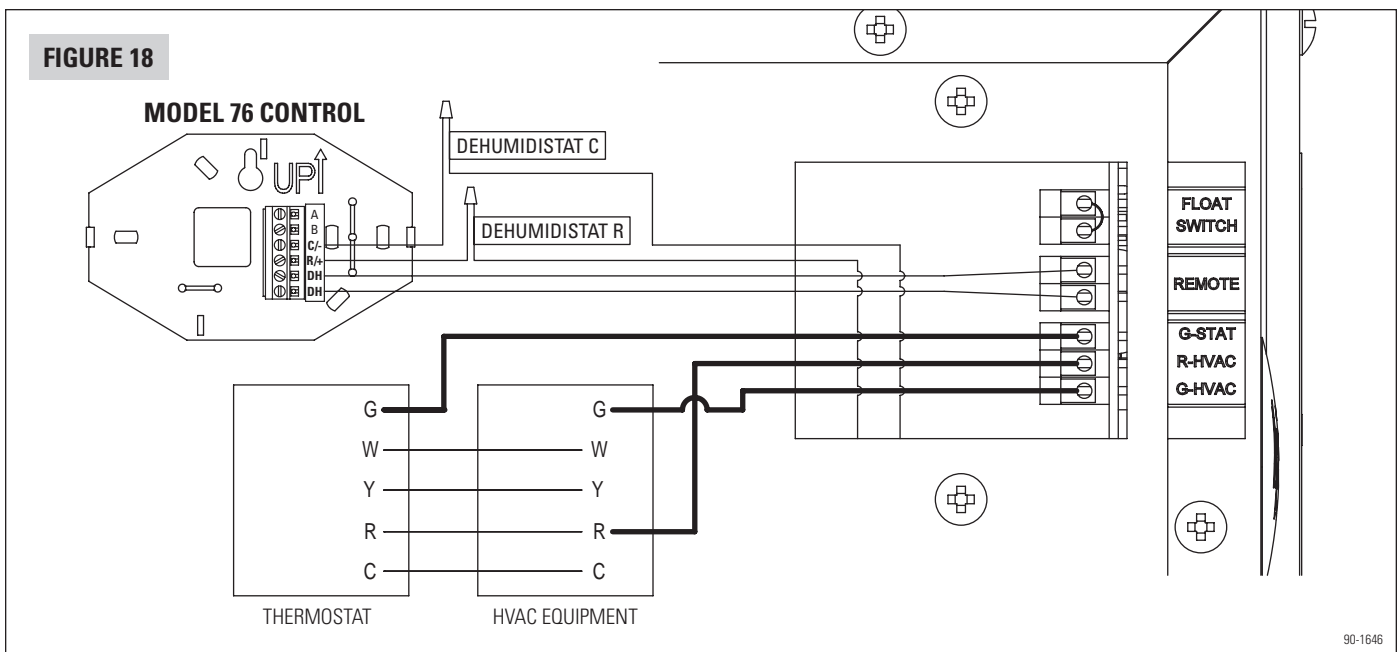
18-24 gauge, 3-wire stranded cable

1. Disconnect power to the dehumidifier and HVAC system.

2. Remove the wiring access panel on the dehumidifier outlet panel.
3. Run a 3-wire cable from the dehumidifier to the furnace/air handler.
4. At the HVAC equipment, disconnect the thermostat wire from the **G** terminal. Wire nut this wire to one of the wires (**G-STAT**) from the 3-wire cable. Connect the remaining two wires to the HVAC **R** terminal (**R-HVAC**) and the HVAC **G** terminal (**G-HVAC**).
5. Unplug the **G-STAT**, **R-HVAC**, and **G-HVAC** terminal block from the circuit board. Make the connections shown in **Figure 18**.
6. Plug the terminal block back into the circuit board.

7. Unplug the **REMOTE** terminal block from the circuit board. Connect the **DH** wires from the Model 76 to the **REMOTE** terminals as shown in **Figure 18**.
8. Plug the terminal block back into the circuit board.
9. Pull the **Dehumidistat C** and **Dehumidistat R** wires out of the wiring access panel and remove the wire nuts.
10. Using the wire nuts, make the final two connections with the 4-wire cable to **C/-** and **R/+** as shown in **Figure 18**.
11. Replace the wiring access panel on the unit.
12. Snap the Model 76 front cover on the backing plate. The 6-pin terminal aligns with the terminal block receptacle on the backing plate.
13. Proceed to **SYSTEM CHECKOUT** on page 9.

FIGURE 18

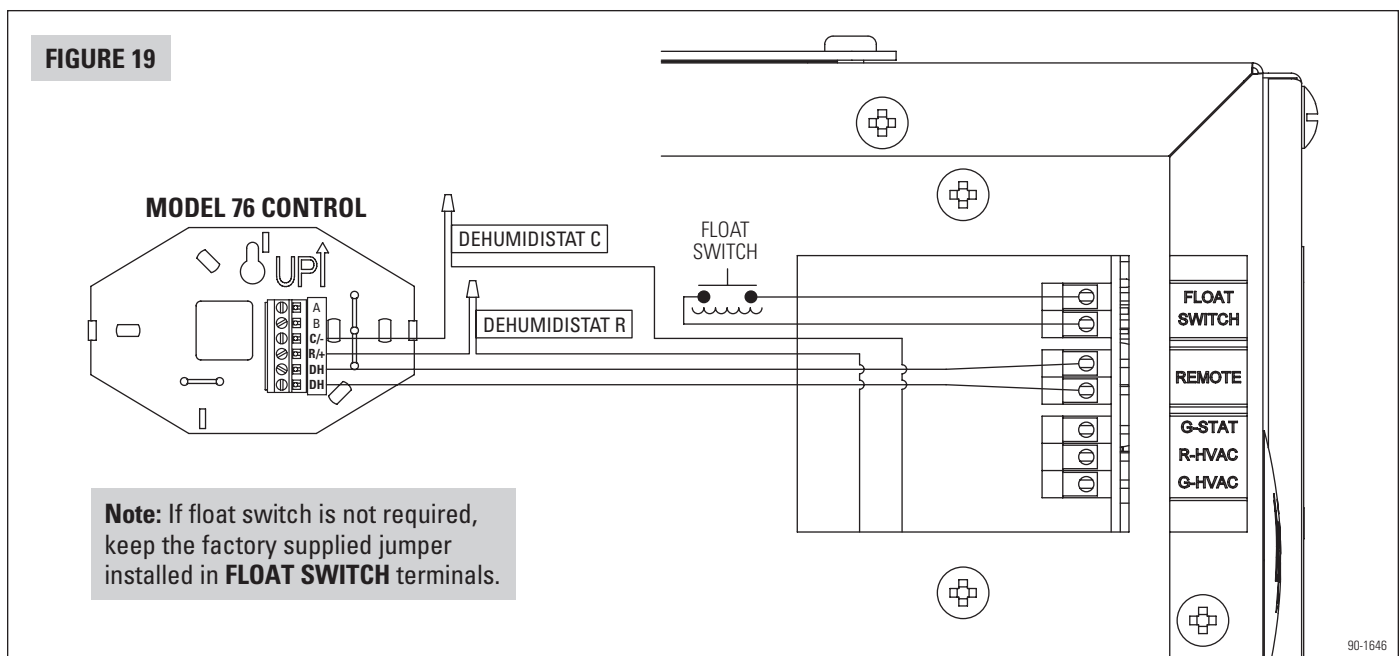


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STAND ALONE INSTALLATIONS

When the dehumidifier is not wired to the HVAC system, air is pulled through the unit, dehumidified, and circulated solely by the dehumidifier blower. No additional components are required for this configuration. The 24 VAC wires to power the control off the dehumidifier transformer are located inside the wiring access panel.

1. **Disconnect power to the dehumidifier.**
2. Remove the wiring access panel on the dehumidifier outlet panel.
3. Unplug the **REMOTE** terminals from the circuit board. Connect the **DH** wires from the Model 76 to the **REMOTE** terminals as shown in **Figure 19**.
4. Plug the terminal block back into the circuit board.
5. Pull the **Dehumidistat C** and **Dehumidistat R** wires out of the wiring access panel and remove the wire nuts.
6. Using the wire nuts, make the final two connections with the 4-wire cable to **C/-** and **R/+** as shown in **Figure 19**.
7. Remove the **FLOAT SWITCH** terminal block from the circuit board. Make the connections shown in **Figure 19**.
8. Replace the wiring access panel on the unit.
9. Snap the Model 76 front cover on the backing plate. The 6-pin terminal aligns with the terminal block receptacle on the backing plate.
10. Proceed to **SYSTEM CHECKOUT** on page 9.



SYSTEM CHECKOUT

POWER UP

1. Check all wiring and restore power to the HVAC equipment.
2. Plug in the dehumidifier and turn on/off switch ON.
 - Check LED indicators located below the wiring access panel (see below). Verify the green POWER LED is on. The green LED is on when power is applied to the system.
 - Model 76 Control: After a 4 second start up sequence all buttons on the Model 76 will be functional.
 - The control will display the measured humidity.

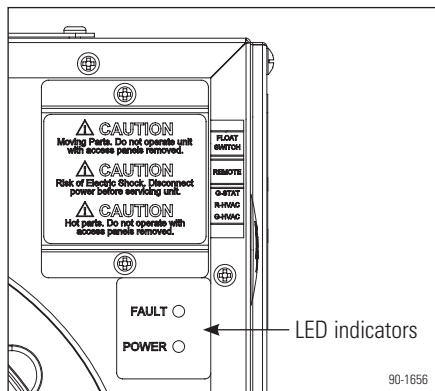
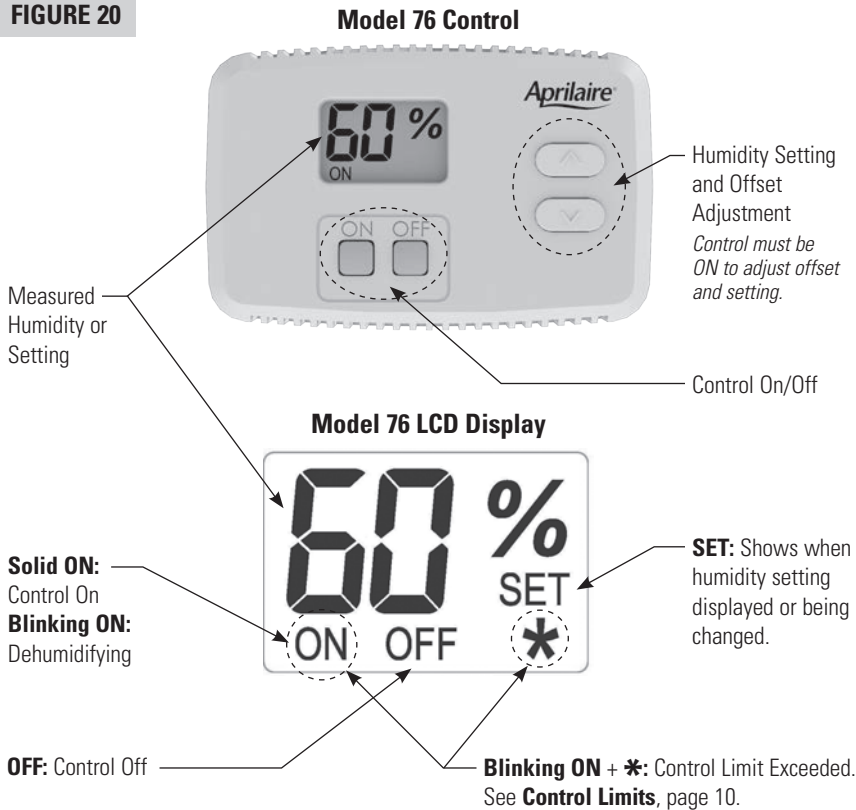


FIGURE 20



TEST MODE

1. Press and hold the ON button for 5 seconds to enter Test Mode.
 - a. Verify the measured humidity is displayed on the screen.
 - b. Verify the dehumidifier turns on and ON blinks on the screen.
 - c. If wired to the HVAC system, verify the HVAC fan turns on.
 - d. After 3 minutes, if still in TEST MODE, the compressor will turn on.
 - e. Check LED indicators. The green POWER LED will remain on. If the red FAULT LED is on, refer to the **TROUBLESHOOTING GUIDE**. The red LED turns on when a fault condition is active.
2. After 5 minutes or after pressing the OFF button, the control will enter Off mode.
 - a. Verify the dehumidifier turns off.
 - b. If wired to the HVAC system, verify the HVAC fan turns off.

HUMIDITY SETTING

- The control must be ON to adjust the humidity setting.
- The ▲ (up) and ▼ (down) buttons are used to increase or decrease the humidity setting.
- The first press of either button will display the current setting on the LCD display and SET will be displayed below the % sign.
- Each subsequent push of the up or down buttons will change the setting by 1%.
- If a button is held down, the setting will continually change by 1% for as long as the button is pressed.
- The control will return to Normal Mode, displaying the measured humidity, 5 seconds after the last button press/release.

OFFSET

An offset can be applied to the humidity reading to avoid discrepancies with other humidity measuring devices in the home. Allow 48 hours for the control to acclimate before applying an offset. The control must be ON to enter the Offset screen.

- Press and hold the OFF button for 5 seconds to enter the Offset screen.
- The ▲▼ buttons can be used to set an offset value between -5% RH and +5% RH.
- The control will return to Normal Mode, displaying the measured humidity, 5 seconds after the last button press/release.

FIGURE 21 – Offset Screen



90-1638

TURNING ON AND SETTING CONTROL

1. Press the ON button.
2. Use the ▲▼ buttons to set the control at 59%.
 - ▲ Increasing the humidity setting will decrease dehumidifier run time, allowing for higher humidity levels.
 - ▼ Decreasing the humidity setting will increase dehumidifier run time, allowing for lower humidity levels.

SEQUENCE OF OPERATION

The Model 76 Control continually measures the humidity of the space in which it is located and controls to the humidity setting.

Normal Mode

- When the measured humidity is greater than the setting, the control will activate the dehumidifier output.
 - Model 76: ON will blink on the display.
 - Dehumidifier: The dehumidifier blower will turn on and the DEH FAN Amber LED on the circuit board (middle LED, not visible unless wiring access panel is removed) will illuminate. The HVAC system blower, along with the HVAC FAN Amber LED (top LED, not visible unless wiring access panel is removed) will turn on if the dehumidifier is wired to the HVAC system. **Note:** The HVAC FAN LED will turn on regardless of wiring to the HVAC system. After three minutes of blower operation, the dehumidifier compressor will turn on along with the COMPR Amber LED (bottom LED, not visible unless wiring access panel is removed).
- When the measured humidity falls 3% RH below the setting, the control will deactivate the dehumidifier output.
 - Model 76: ON will stop blinking on the display.
 - Dehumidifier: 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. All Amber LEDs will turn off.

Control Limits

- If the control measures a **dew point** below 40°F OR a **temperature** above 99°F, the control will deactivate the dehumidifier output if actively dehumidifying, the dehumidifier will stop dehumidifying, and **ON** and ***** will blink on the display.
- The control will resume normal operation when the measured dew point is greater than 45°F or the measured temperature is below 94°F, depending on which control limit was exceeded.

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 that follow to help find and correct system faults. Contact Technical Support before replacing the control or for additional troubleshooting.

ERROR CODES

When the control detects an internal error, it will stop controlling, deactivate the dehumidifier output, and the display will show the Error Code. See **Figure 22**. The control will attempt to recover from the error every 10 minutes. The Error Code will continue to be displayed as long as the error condition exists. Button presses are not registered when in Error Mode. Cycling power to the control will not clear the code and the control will need to be replaced if the error code persists.

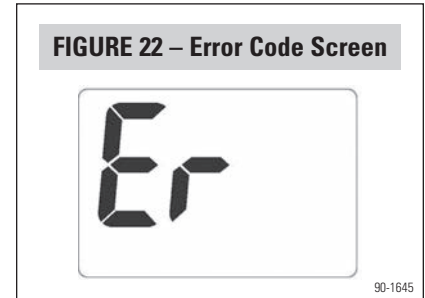


TABLE 1 – Model 76 Troubleshooting Guide

Symptom	Possible Reason	Troubleshooting Procedure
No power to the control.	Incorrect wiring.	Verify wiring connections between control, dehumidifier and HVAC system (where applicable).
	No power to dehumidifier.	<ul style="list-style-type: none"> • Verify that the dehumidifier power switch is ON. • Verify the circuit breaker has not tripped.
	No power to HVAC equipment.	<ul style="list-style-type: none"> • Verify HVAC system switch is on. • Verify the circuit breaker has not tripped.
Control does not turn on dehumidifier output.	Incorrect wiring.	Verify wiring connections between control and dehumidifier.
Control does not turn on HVAC fan.	Incorrect wiring.	Verify wiring connections between dehumidifier and HVAC system.
Display does not flash all LCD segments during Test Mode.	LCD error.	Replace control.
Display shows Er.	Control detected an internal error.	The control will need to be replaced.
Inaccurate humidity reading.	Control recently installed after being stored in an uncontrolled temperature and humidity environment.	Allow 48 hours for control to acclimate.
	Offset has been applied to the humidity reading.	Change the offset.
	Control is mounted in direct sunlight, above a heat or humidity source, or in the path of a supply register.	Relocate the control.

TABLE 2 –Dehumidifier Troubleshooting Guide

Symptom	Possible Reason	Troubleshooting Procedure
Red LED On. Blower and 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 backflow damper is blocked or stuck. Remove obstruction.
Blower is running but compressor is not.	Coil is frosting.	<ul style="list-style-type: none"> • Lack of, or reduced airflow, check/clean filter. • Inlet air conditions too low (below 60°F), increase Model 76 setpoint.
	Blower 3 minute minimum on time.	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 the 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 is off (15 amp circuit required).	<ul style="list-style-type: none"> • Check that the on/off switch on the dehumidifier is ON. • Check if circuit breaker has tripped.
	Model 76 Control is OFF.	Turn on Model 76. See Table 1 for additional Model 76 troubleshooting steps.
Dehumidifier is loud when operating.	Fan noise.	If inlet is not ducted to HVAC return, install approximately 2' of 8" flex duct on the inlet collar.
	Vibration.	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 DUCTWORK INSTALLATION on page 5. • Wire dehumidifier to the HVAC system.

