Aprilaire®

Model 75 Dehumidifier Control Installation Instructions

READ AND SAVE THESE INSTRUCTIONS

The Model 75 is for use with any dehumidifier requiring a normally open control, including Aprilaire Models 1710A, 1730A, 1750A, 1770A.

SAFETY INSTRUCTIONS

⚠ WARNING

1. Improper installation may cause property damage or injury. Installation, service, and maintenance must be performed by a qualified service technician.

2. 120 Volts may cause serious injury from electric shock. Disconnect electrical power before starting installation or servicing. Leave power disconnected until installation/service is completed. This control is not a 120 Volt (line voltage) device.

⚠ CAUTION

1. Read all instructions before beginning installation.

2. Do not use in pool applications. Pool chemicals can damage the control.

3. Do not use solvents or cleaners on or near the display and circuit board. Chemicals can damage components.

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OVERVIEW

The Aprilaire® Model 75 Dehumidifier Control provides control of the dehumidifier from the living space. The control allows the homeowner to set and adjust the humidity setting and turn dehumidification on or off from a convenient location. The Model 75 uses an onboard sensor to monitor the relative humidity in the space in which it is located and displays the measured relative humidity on the digital display.

SPECIFICATIONS

ELECTRICAL	
Input Voltage and Current	Voltage: 24V AC +/-20% Current: 25mA (nominal), 50mA (max.) at 24V AC
Output	Dry Contact, Normally Open – DH Terminals

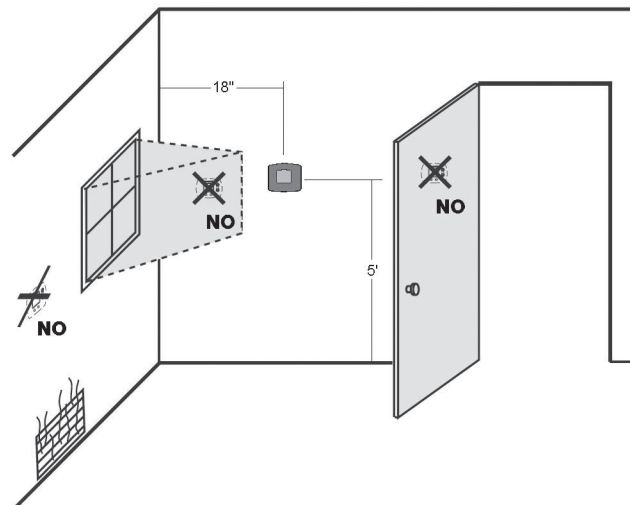| CONTROL	
Humidity Setting Range	40% – 80% RH
Accuracy	+/-5% RH
Differential	3%
Low Limit	40°F Dew Point
High Limit	99°F Dry Bulb

LOCATION RECOMMENDATIONS

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.
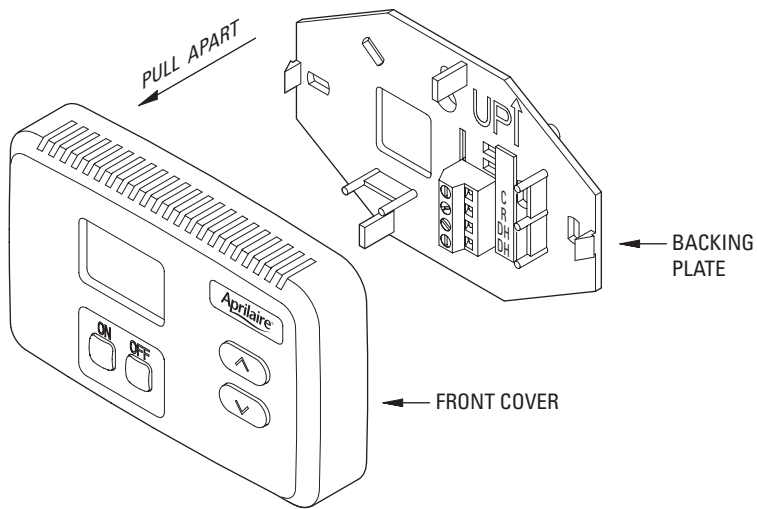- On a wall with concealed pipes or ductwork.

FIGURE 1 – Mounting Control

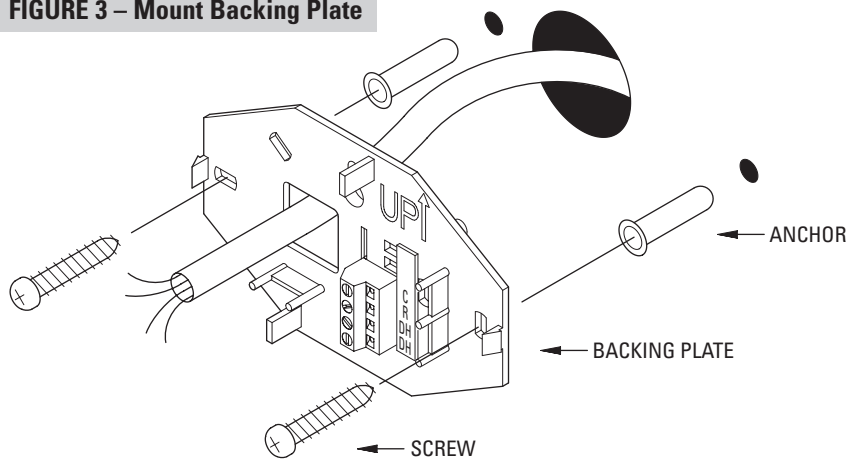90-1640

INSTALLATION

MOUNT CONTROL

If replacing a control mounted in the living space, see **Control Mounted in Living Space** on page 5.

FIGURE 2 – Disassemble Control

PULL APART

BACKING PLATE

FRONT COVER

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FIGURE 3 – Mount Backing Plate

ANCHOR

BACKING PLATE

SCREW

90-1632

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 3**.

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.

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.
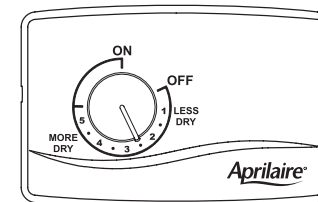
REPLACING A MANUAL DEHUMIDISTAT

STEP 1 – REMOVE THE CURRENT MANUAL CONTROL

IF THE CONTROL IS MOUNTED IN THE LIVING SPACE:

FIGURE 4 – Manual Dehumidistat

ON
OFF
5
MORE DRY
4
3
2
1
LESS DRY
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1. **Disconnect power to the dehumidifier and HVAC system.**

2. Pull knob from the dehumidistat cover and remove cover from the control base.

3. Remove the four screws from the base plate.

4. Pull the dehumidistat off the wall until wire nuts are exposed.

5. Remove dehumidistat leads.

6. The existing 2-wire cable can remain. The Model 75 wiring requires 4 wires. Install more wires as needed.

7. Mount the Model 75 control following steps 1-5 in the **MOUNT CONTROL** section above. Reuse the existing wire access hole and wiring as needed.

8. Connect the existing wires (from 1730A **REMOTE** terminals) to the **DH** terminals and connect the remaining two wires to the **C** and **R** terminals on the Model 75 backing plate.

9. Proceed to **WIRING** section on page 7.

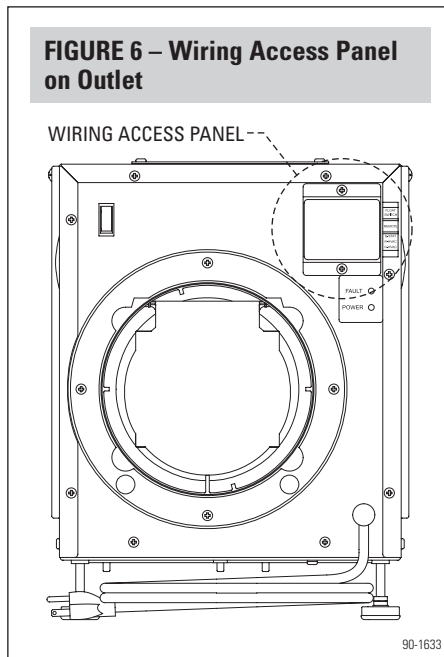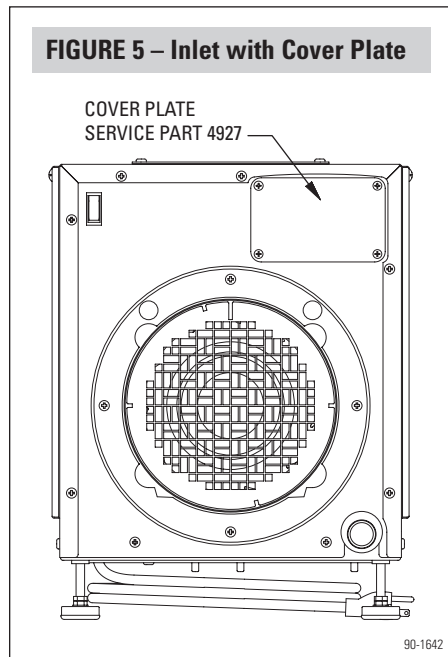**IF THE CONTROL IS MOUNTED ON A 1730A DEHUMIDIFIER:**

1. **Disconnect power to the dehumidifier and HVAC system.**
2. Pull knob from the dehumidistat cover and remove cover from the control base.
3. Remove the four screws from the base plate and pull the dehumidistat off the unit until 4"–6" of wire is outside of the unit.
4. Cut the wires and use metal tape to secure the leads to the inside of the unit, preventing contact with the blower.
5. Remove the gasket from the base plate.
6. Install the insulated cover plate (Service Part 4927) and gasket over the opening, using the screws removed in step 3. See **Figure 5**.
7. Remove the wiring access panel on the outlet panel. See **Figure 6**.
8. Unplug the REMOTE terminals from the circuit board, remove the two wires and cut off the bare leads. Once cut, the wires may remain in the unit.
9. Replace REMOTE terminals on circuit board and leave wiring access panel off for Model 75 wiring.
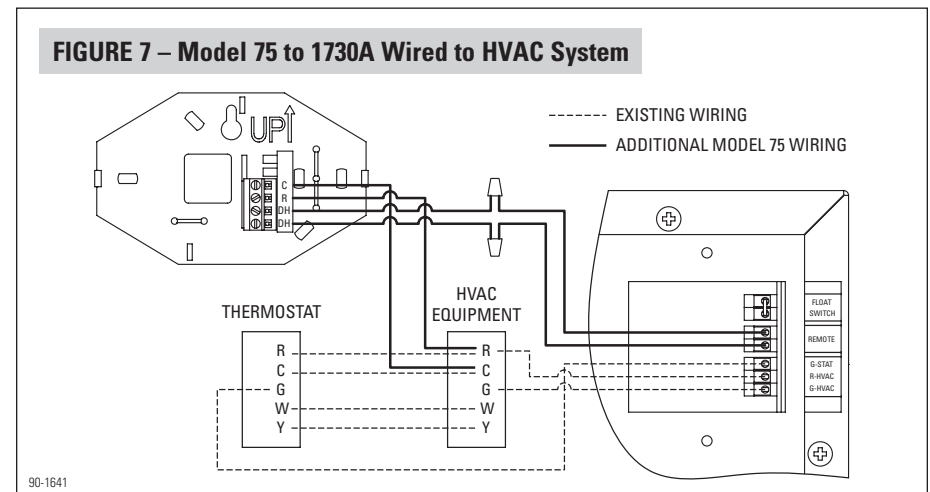10. Proceed to **WIRING** section on page 7.

FIGURE 5 – Inlet with Cover Plate

COVER PLATE
SERVICE PART 4927

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FIGURE 6 – Wiring Access Panel on Outlet

WIRING ACCESS PANEL

FAULT
POWER

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WIRING

STEP 2 – SUPPLY 24VAC TO THE MODEL 75 CONTROL

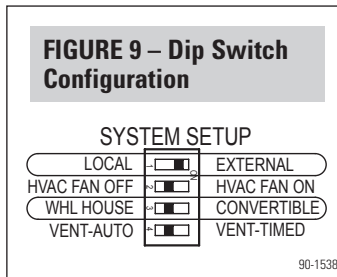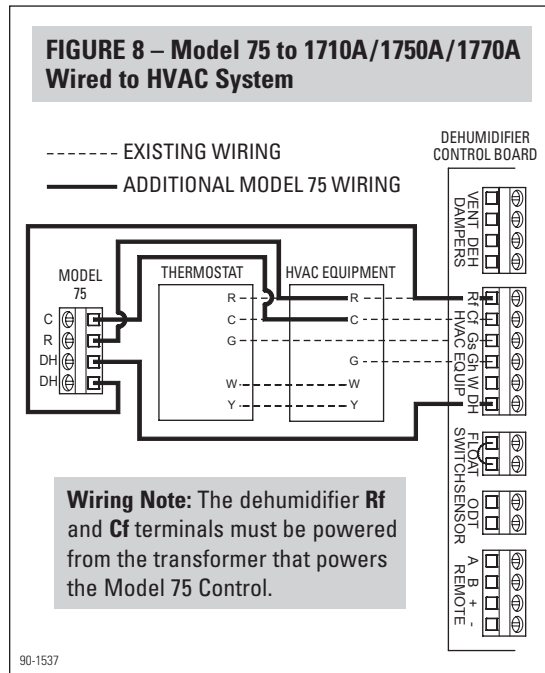The Model 75 control requires 24VAC. Pulling power from the HVAC system is the recommended method.

MODEL 75 TO 1730A

1. **Disconnect power to the dehumidifier and HVAC system.**
2. If replacing a dehumidistat that was in the living space, follow steps 3-6. If replacing a dehumidistat that was on the dehumidifier, follow steps 7-13.
3. Connect the wires from the **C** and **R** terminals on the Model 75 to the HVAC or thermostat **C** and **R** terminals.
4. Connect the existing wires connected to the **REMOTE** terminals to the **DH** terminals on the Model 75.
5. Snap the Model 75 front cover on the back plate. The 4-pin terminal aligns with the terminal block receptacle on the back plate.
6. Proceed to **SYSTEM CHECKOUT** on page 9.
7. Remove the wiring access panel (if not already removed) on the dehumidifier outlet panel.
8. Unplug the **REMOTE** terminals from the circuit board.
9. Connect the wires from the **DH** terminals on the Model 75 to the **REMOTE** terminals and plug the terminals back into the unit circuit board.
10. Connect the wires from the **C** and **R** terminals on the Model 75 to the HVAC or thermostat **C** and **R** terminals.
11. Replace the wiring access panel on the dehumidifier.
12. Snap the Model 75 front cover on the backing plate. The 4-pin terminal aligns with the terminal block receptacle on the backing plate.
13. Proceed to **SYSTEM CHECKOUT** on page 9.

FIGURE 7 – Model 75 to 1730A Wired to HVAC System

------- EXISTING WIRING
——— ADDITIONAL MODEL 75 WIRING

UP

C
R
DH
DH

THERMOSTAT

R
C
G
W
Y

HVAC EQUIPMENT

R
C
G
W
Y

FLOAT SWITCH

REMOTE

G-STAT
R-HVAC
G-HVAC

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MODEL 75 TO 1710A/1750A/1770A

1. **Disconnect power to the dehumidifier and HVAC system.**

2. Remove the control door on the dehumidifier inlet panel.

3. Connect one wire from the **DH** terminal on the Model 75 to the **DH** terminal on the control board.

4. Connect the other wire from the **DH** terminal on the Model 75 to the **Rf** terminal on the control board.

5. Connect the wires from the **C** and **R** terminals on the Model 75 to the HVAC or thermostat **C** and **R** terminals.

6. Set **SYSTEM SETUP** switches to **EXTERNAL** and **WHL HOUSE**. See **Figure 9**.

7. Replace the control door on the dehumidifier.

8. Snap the Model 75 front cover on the backing plate. The 4-pin terminal aligns with the terminal block receptacle on the backing plate.
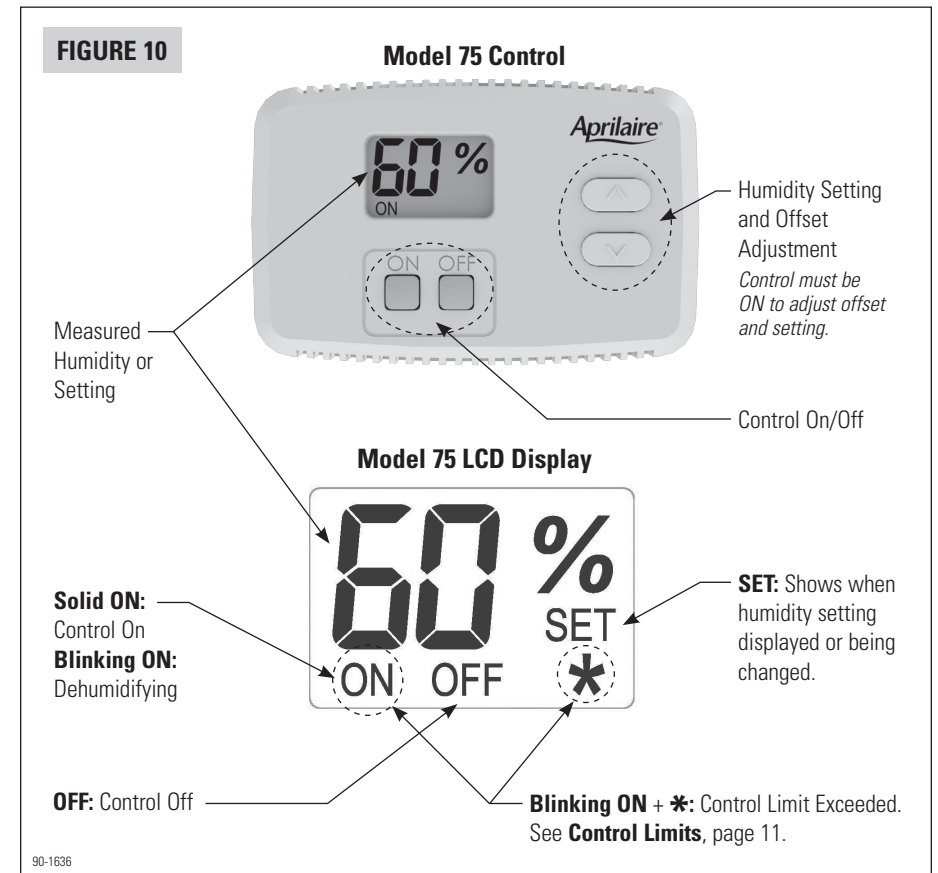
FIGURE 8 – Model 75 to 1710A/1750A/1770A Wired to HVAC System

- - - - - - - EXISTING WIRING
———— ADDITIONAL MODEL 75 WIRING

DEHUMIDIFIER CONTROL BOARD

MODEL 75

THERMOSTAT   HVAC EQUIPMENT

Wiring Note: The dehumidifier **Rf** and **Cf** terminals must be powered from the transformer that powers the Model 75 Control.

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FIGURE 9 – Dip Switch Configuration

SYSTEM SETUP

LOCAL		EXTERNAL
HVAC FAN OFF		HVAC FAN ON
WHL HOUSE		CONVERTIBLE
VENT-AUTO		VENT-TIMED

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System Setup Note:
The convertible configuration is not available with the Model 75 control.

SYSTEM CHECKOUT

POWER UP

1. Check all wiring.

2. Plug in dehumidifier and restore power to the HVAC system.

3. Turn on/off switch on dehumidifier ON. After a 4 second start up sequence all buttons on the Model 75 will be functional.

- The control will be OFF.
- The humidity setting will be 60%.
- The control will display the measured humidity.

FIGURE 10   **Model 75 Control**

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Humidity Setting and Offset Adjustment
Control must be ON to adjust offset and setting.

Measured Humidity or Setting

Control On/Off

Model 75 LCD Display

SET: Shows when humidity setting displayed or being changed.

Solid ON:
Control On
Blinking ON:
Dehumidifying

OFF: Control Off

Blinking ON + ✳: Control Limit Exceeded. See **Control Limits**, page 11.

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TEST MODE

1. Press and hold the ON button for 5 seconds to enter Test Mode.

    a. Verify all LCD segments blink every second.

    b. Verify dehumidifier turns on.

2. After 5 minutes or after pressing the OFF button, the control will enter Off mode.

    a. Verify the dehumidifier 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% every 1/2 second 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 11 – Offset Screen

-2 %

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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

Normal Mode

- When the measured humidity is greater than the setting, the control will activate the dehumidifier output, the dehumidifier will begin dehumidifying and ON will blink on the LCD display.
- When the measured humidity falls 3% below the setting, the control will deactivate the dehumidifier output, the dehumidifier will stop dehumidifying and the LCD will display a solid ON.

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 LCD screen.
- The control will resume normal operation when the measured dew point is greater than 45°F or the measured temperature is below 94°F, whichever 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 guide on the following page 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 LCD will display the Error Code. See **Figure 12**. 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.

FIGURE 12 – Error Code Screen

EE

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TABLE 1 – 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.	• Verify that the dehumidifier power switch is ON. • Verify the circuit breaker has not tripped.
	No power to HVAC equipment.	• 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 EE.	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.

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