


RL-14


DEHUMIDIFIER




 *Installation, Operation, and
Maintenance Manual*

Read and save these instructions

Warnings and cautions

 WARNING	CAUTION
Indicates a hazardous situation that could result in death or serious injury if instructions are not followed.	Indicates a hazardous situation that could result in damage to or destruction of property if instructions are not followed.

 WARNING
<ul style="list-style-type: none">• High voltage may cause serious injury from electric shock. Disconnect electrical power before starting installation or servicing. Leave power disconnected until installation/service is completed.• Sharp edges may cause serious injury from cuts. Use care when cutting plenum openings and handling duct work.• Dropping may cause personal injury or equipment damage. Handle with care and follow installation instructions.


 CAUTION
<ul style="list-style-type: none">• Read all instructions before beginning installation.• This appliance 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 appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.• 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.• If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.• If hard wiring the appliance, install a disconnect within eyesight of the appliance which provides full disconnection under overvoltage category III conditions. Refer to local and national codes and full instructions on page 16.

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ATTENTION INSTALLER

Read this manual before installing.
Leave manual with product owner.

DriSteem® Technical Support
800-328-4447

WHERE TO FIND MORE INFORMATION

Our web site:

The following documents are available on our web site: www.dristeem.com

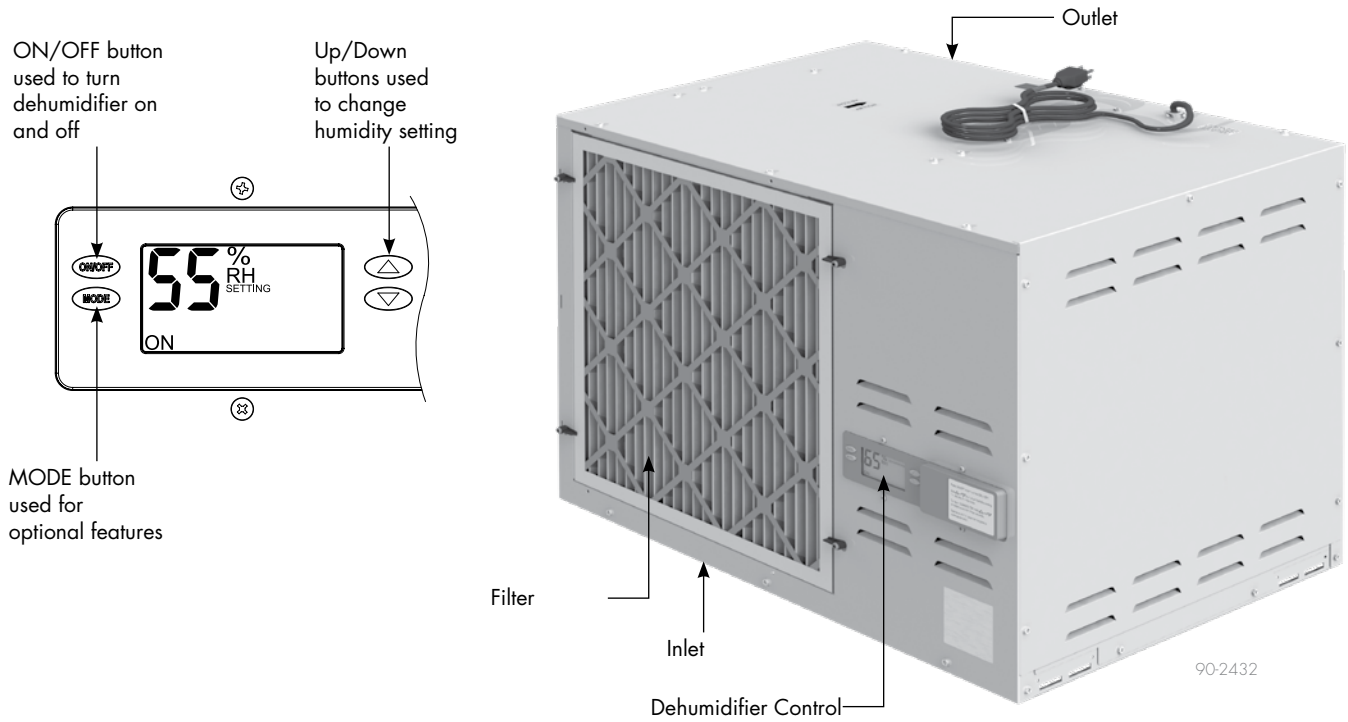
- CDS Dehumidifier Brochure
- CDS Dehumidifier IOM

Call us at 800-328-4447

Obtaining documents from our web site is the quickest way to view our literature.



Product overview

FIGURE 4-1: CDS DEHUMIDIFIER

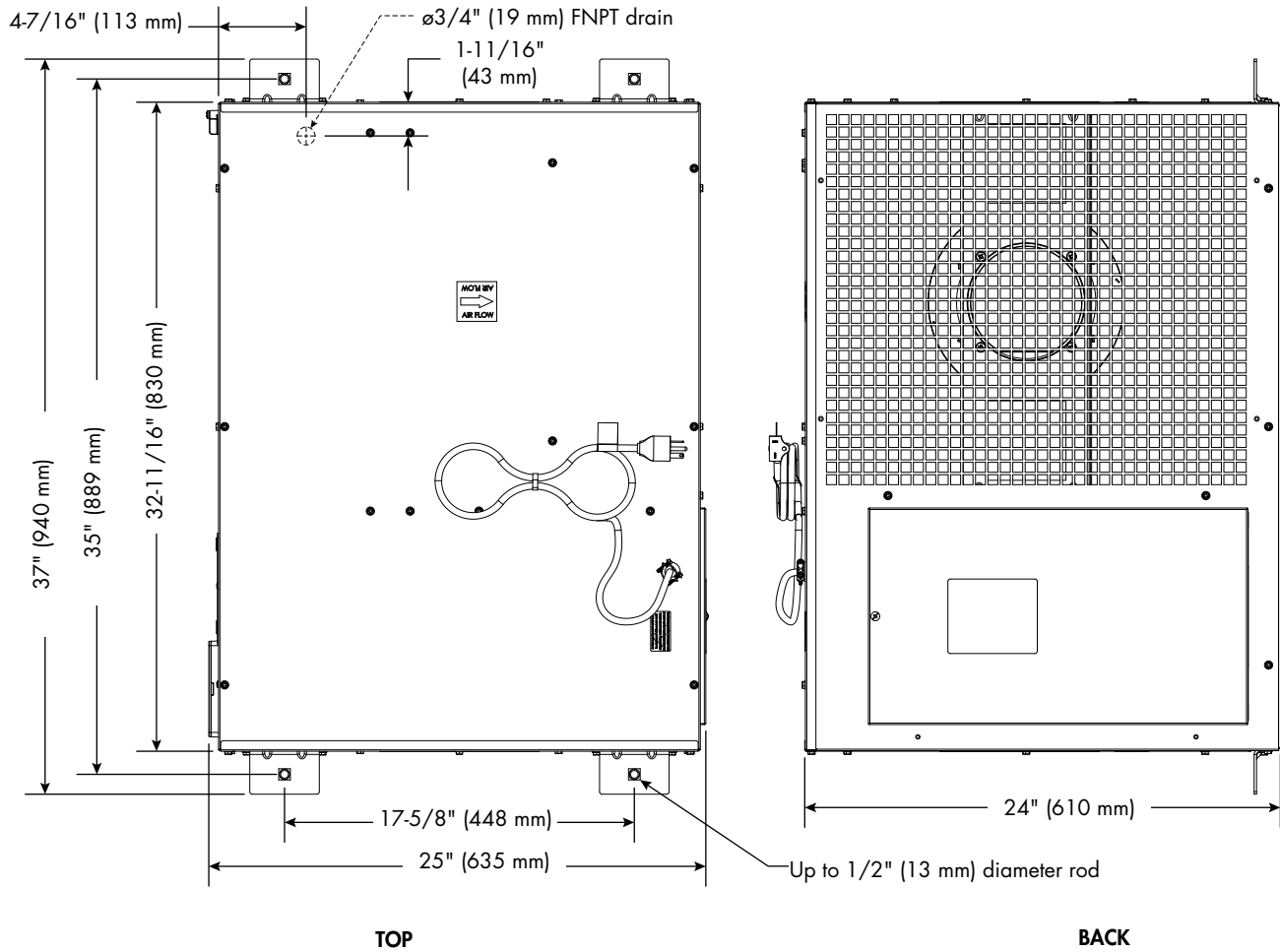
Models, capacities, and electrical specifications

**Table 5-1:
Model RL -14 Specifications**

Capacity	40 gallons/day (13.9 lb/h/320 pints/day) @ 80°F (26.7°C), 60% RH	42.5 gallons/day (14.7 lb/h/340 pints/day) @ 80°F (26.7°C), 60% RH
Airflow	830 CFM (1410m³/h) (free flow)	
Voltage	208 - 240 VAC, 1 Phase, 60 HZ	277 VAC, 1Phase, 60 HZ
Operating Current	11.1A @ 80°F (26.7°C), 60% RH, 240 VAC	9.2A @ 80°F (26.7°C), 60% RH, 277 VAC
Rated Current	20 amp breaker	
Efficiency	2.9 L/kWh	2.5 L/kWh
Operating Temperature Range	50°F to 104°F (10°C to 40°C), 60°F (15.6°C) @ 40% RH to 85°F (29.4°C) @ 80% RH (ideal conditions for unit to not go into defrost or shut down due to high pressure)	
Operating Dew Point Lower Limit	40°F (4°C)	
Dimensions	Width: 32.63" (829 mm) Height: 24" (610 mm) Length: 24.25" (616 mm)	
Weight	180 lbs (82 kg) (without packaging)	
Drain Size	3/4" FNPT (DN 20)	
Filter	MERV 11 (20"x22"x2")	
Power cord	Units shipped with 10' (3m) power cord or can be hard wired.	
Refrigerant	R410A	
Dehumidifier control	50°F and 104°F (10°C to 40°C) cut off	
External control	On/off dry contact	

Dimensions

FIGURE 6-1: RL-14 DEHUMIDIFIER DIMENSIONS



90-2433

Selecting a location

UNPACKING THE DEHUMIDIFIER

Use the cutline on the carton to pull carton off dehumidifier.

INCLUDED IN THE CARTON

- Dehumidifier
- Installation manual
- 3/4" (DN20) P-Trap
- 3/4" MNPT x 3/4" (DN20 x 20 mm) female pipe
- 3/4" x 3/4" x 3/4" (DN20 x DN20 x DN20) T-fitting
- 30 feet of thermostat cable
- MERV 11 filter
- Hanging brackets
- Model D77 control (ships separately, if selected)

LOCATION CONSIDERATIONS

This unit is not to be accessible to the general public. The dehumidifiers should be spaced evenly throughout the area to be dehumidified with the following recommendations:

1. Avoid placement where the discharge of one dehumidifier is pointing toward the inlet of another.
2. Avoid locating the dehumidifier inlet too near a supply register. Space is not usually available to totally avoid this, but minimizing the amount of cold air that is discharged to the dehumidifier inlet will improve moisture removal performance of the dehumidifier.
3. Account for handling dehumidifier condensate by considering drain or condensate pump locations.
4. Leave 18" (457 mm) minimum clearance for access to the user interface, electrical panel for service and filter for maintenance. See Figure 7-1.

FIGURE 7-1: SPACE CLEARANCES

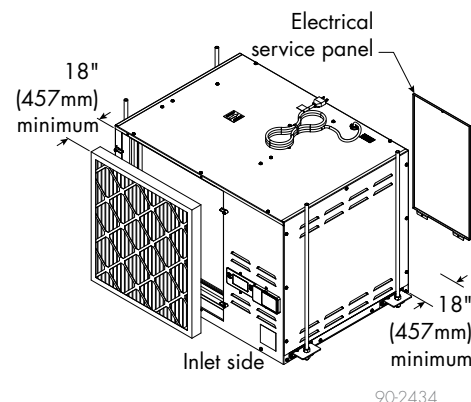


FIGURE 7-2: D77 CONTROLLER



Mounting

INSTALL BRACKETS FOR SUSPENDING UNIT

The brackets are designed to accommodate up to 1/2" threaded rod.

1. Insert bracket into slots on the base. See Figure 8-1.
2. Rotate the bracket up toward the dehumidifier and secure the bracket to the side of the dehumidifier using #12 sheet metal screws (provided). This can be done with a 5/16" hex socket. See Figure 8-2.
3. Repeat for remaining three brackets.

FIGURE 8-1: INSTALL MOUNTING BRACKET IN BASE

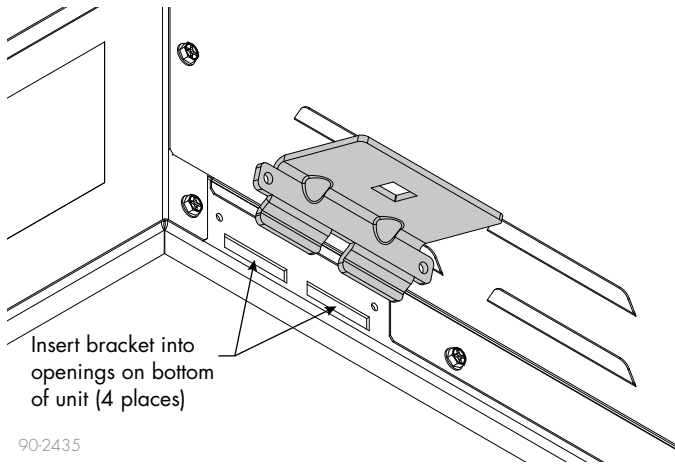
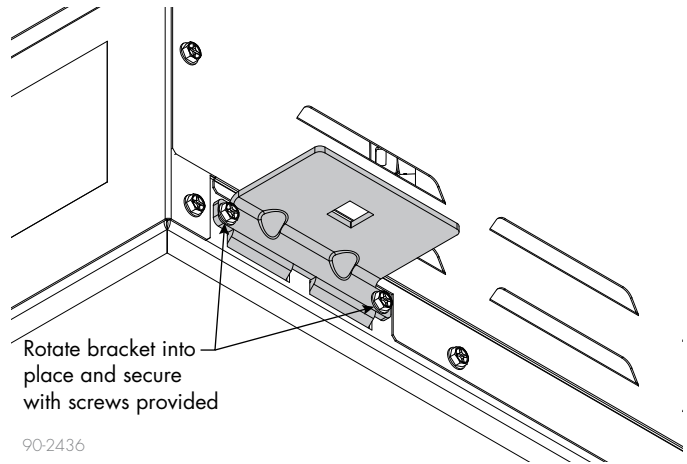


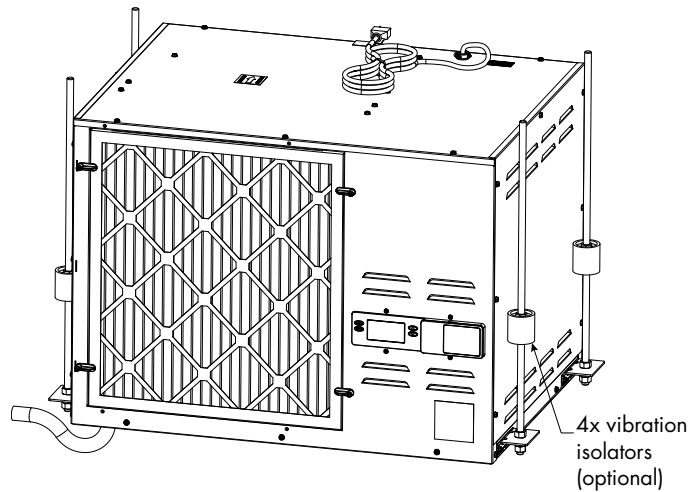
FIGURE 8-2: SECURE BRACKET TO DEHUMIDIFIER



HANGING THE DEHUMIDIFIER

Use the threaded rod to suspend the unit from appropriate ceiling structure. The unit weight is 180 lbs. Install vibration isolators if located in an area where noise could be a concern. Level unit right to left and front to back so that unit drains properly. See Figure 8-3.

FIGURE 8-3: SUSPENSION



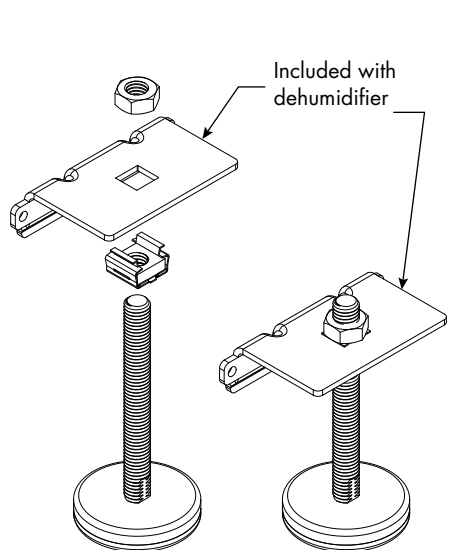
Mounting

FLOOR MOUNTING

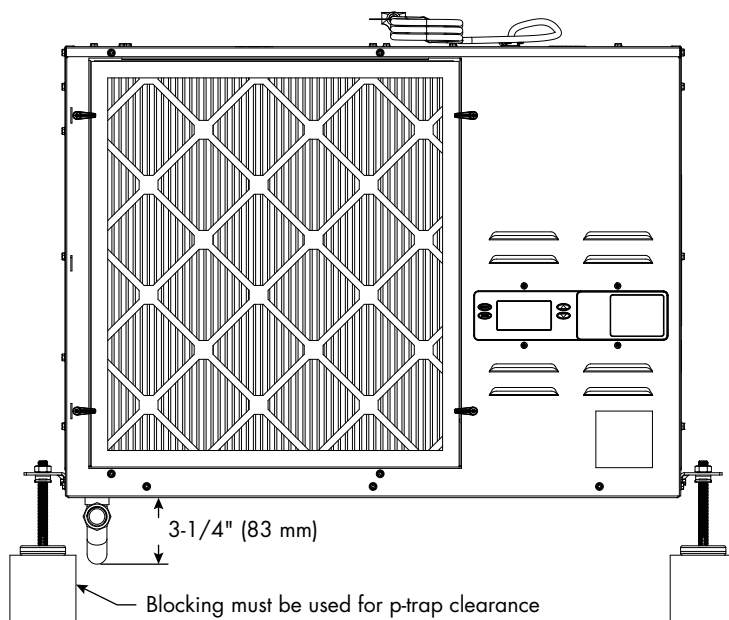
The leveling feet kit (not included) is required for floor mounting. The drain hose/pipe must continuously slope downward toward the drain. Use solid supports as needed to elevate the unit enough to allow for continuous drain slope. Use the adjustable feet to level the unit right to left and front to back so that unit drains properly.

1. Insert nut into the bracket on the dehumidifier.
2. Thread leveling foot into nut to desired height.
3. Lock into place by tightening jam nut.

FIGURE 9-1: FLOOR MOUNTING USING LEVELING FEET KIT (PART #: 601175)



90-2443



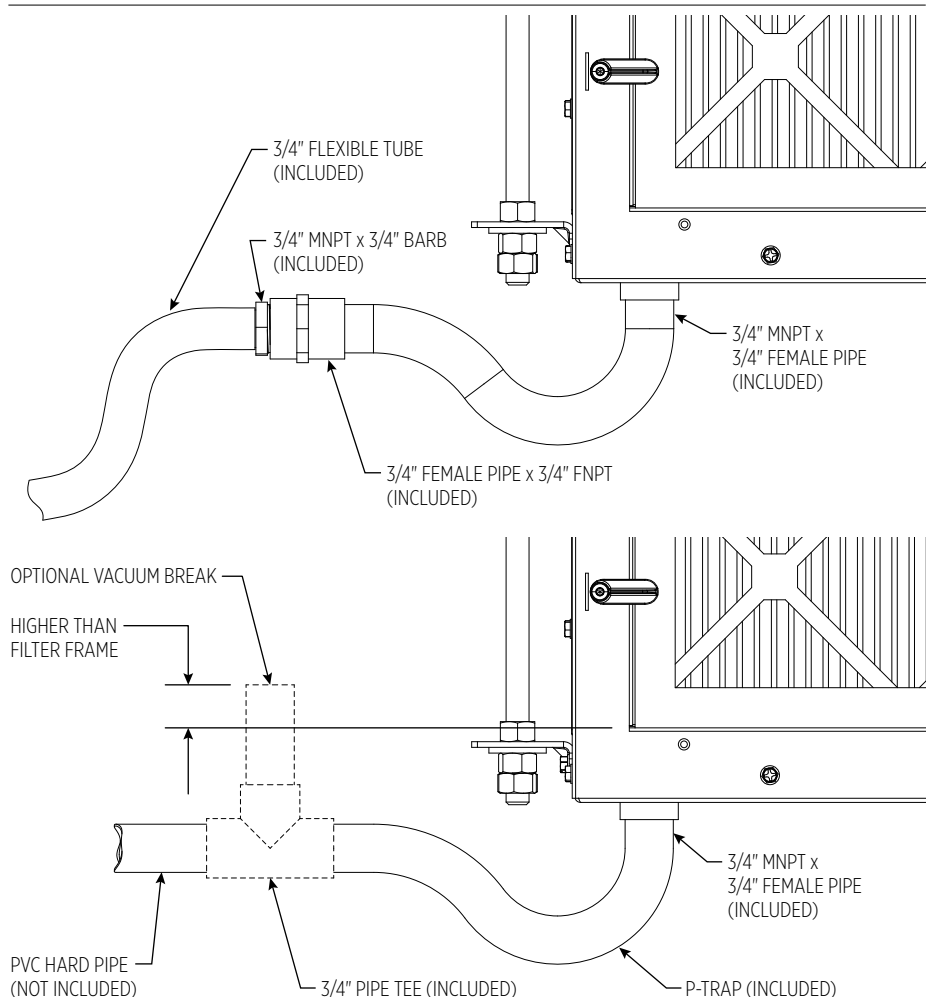
90-2438

Drain installation

The blower draws air through the dehumidifier, putting the cabinet under negative pressure. As a result, the included P-trap is required for proper draining. The installed drain fitting on the dehumidifier is 3/4" (DN20) FNPT. Use the included fittings to trap and install the drain. See Figure 10-1. The drain tubing can be hard pipe or flexible tubing. **NOTE:** PTFE thread seal tape is recommended for the threaded connections and hand tighten only. Use PVC primer and cement for all slip fit connections to prevent leaks. After installing the drain connections, trap, and tubing, pour enough water, about 32 oz. (950 mL) into the dehumidifier drain pan to prime the trap.

If the drain tubing will be installed to a condensate pump, or if a common drain tube will serve multiple dehumidifiers or air conditioners, a vacuum breaker is recommended to prevent the p-trap from being unintentionally siphoned. Install a T-fitting with a short section of drain tubing pointed vertically and extending above the start of the filter (see Figure 10-1). Install the vacuum breaker after the P-trap.

FIGURE 10-1: DRAIN ASSEMBLY



90-2438

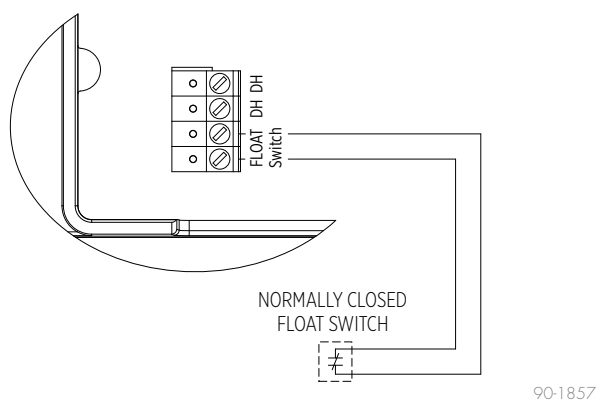
Drain installation

CONDENSATE PAN, CONDENSATE PUMP AND FLOAT SWITCH

A condensate pan is recommended when suspending the dehumidifier over finished areas or product. Adhere to local codes regarding draining of the condensate pan. If a condensate pump is needed, install it in the condensate pan (user provided) as well.

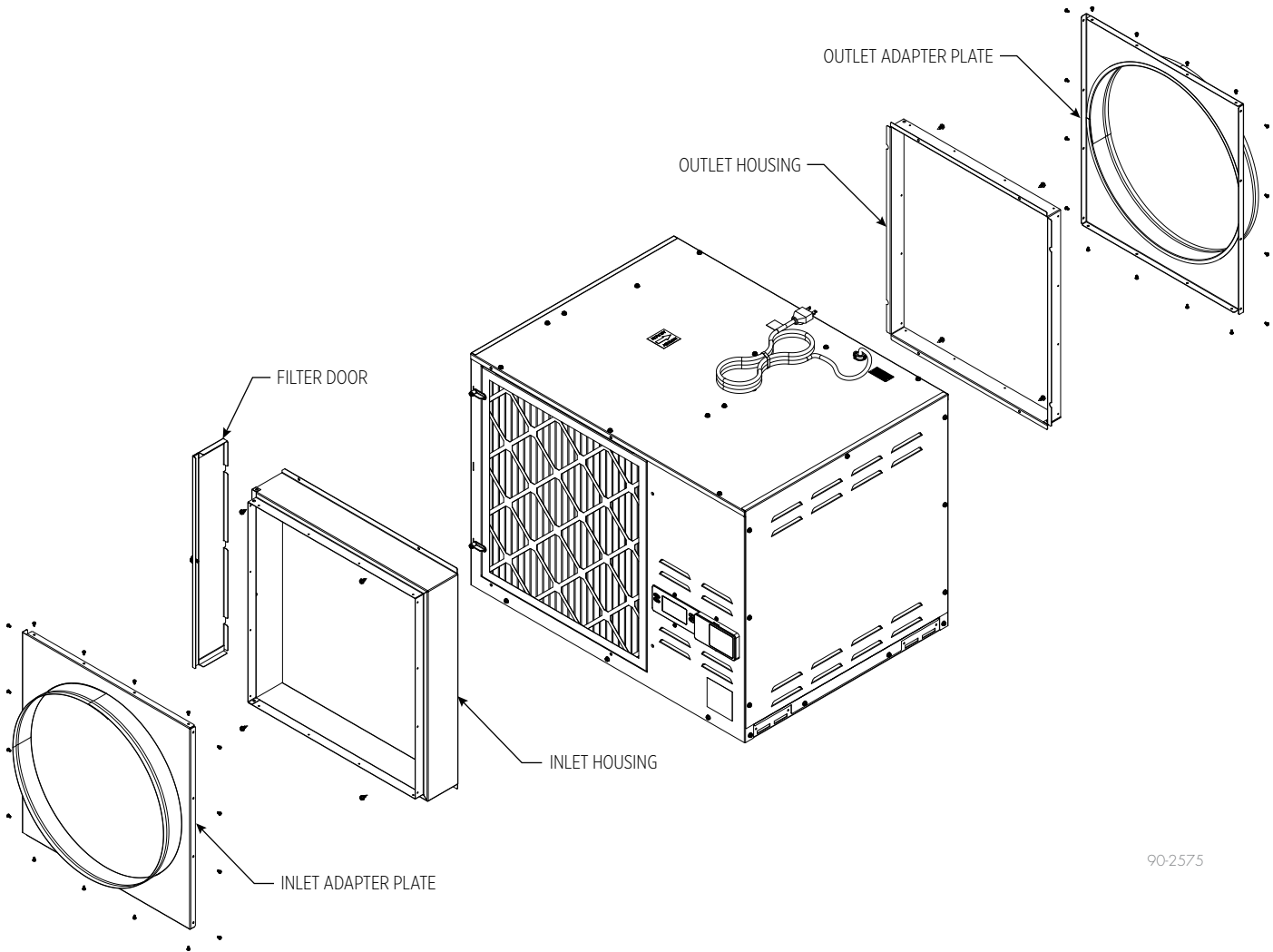
Install a condensate overflow safety switch (i.e. float switch) in the condensate pan (user provided), remove the factory installed jumper wire between the Float Switch terminals on the control and wire the float switch to the dehumidifier as shown in Figure 11-1. Overflow safety switches on condensate pumps can be wired to the Float Switch terminals in a similar fashion.

FIGURE 11-1: FLOAT SWITCH WIRING TO USER INTERFACE



Duct

FIGURE 12-1: DUCT ASSEMBLY



90-2575

CAUTION

Sharp edges may cause serious injury from cuts. Use care when cutting plenum openings and handling duct work.

NOTICE

- Failure to follow ducting guidelines may negatively impact unit performance.
- Minimize equivalent duct length to maximize unit capacity and efficiency.

AIRFLOW DELIVERY SPECIFICATIONS

- Nominal airflow through dehumidifier is 830 cfm (1410 m³/h).
- Airflow decreases as duct length and bends increase, therefore if the equivalent duct length is too long the dehumidifier will cease to function properly.

Duct

DUCT SIZING AND ROUTING

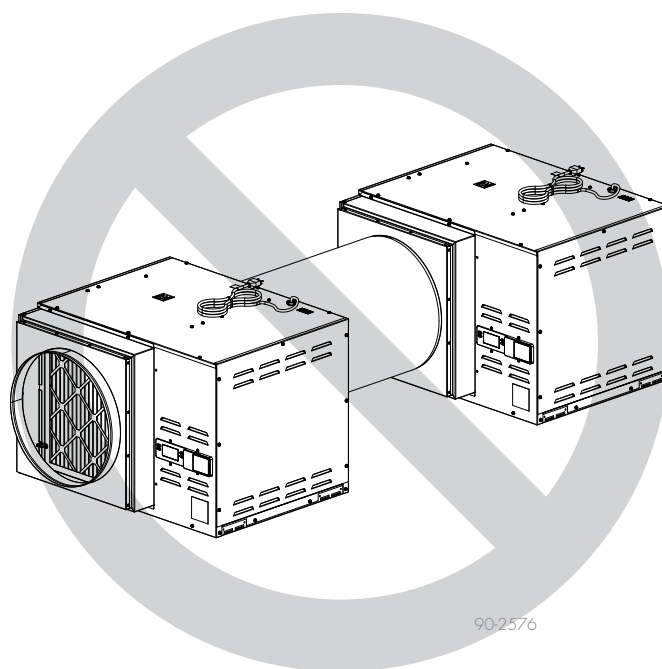
- Inlet and outlet collars fit 18" (457 mm) round duct.
- Unit performance decreases as airflow decreases, the shortest possible duct lengths with minimal bends should be used.
- Do not exceed 1,000 feet (305 m) of metal duct or 750 feet (229 m) of flex duct.

Table 13-1: Equivalent length of bends	
45° bend	5 feet (1.5 m)
90° bend	10 feet (3.0 m)
180° bend	30 feet (9.1 m)

- Max static pressure is 0.6" w.c. (149 Pa).
- Install the dehumidifier in location where filter door, service access panel, compressor side panel, and user interface are accessible.
- Do not install a bend in the ductwork within 2 feet (0.6 m) of the dehumidifier inlet or outlet.
- When selecting duct material, it is preferred to use metal ducting to maintain airflow. If flex duct is to be used, ensure it is extended out as much as possible to limit disruptions to the airflow. Note: Use only insulated ducting when the inlet side of the duct work is located outside of the conditioned space. In some instances when the dehumidifier is placed outside of the conditioned space, the cabinet of the dehumidifier may also need to be insulated to prevent condensation formation on the exterior of the unit.
- Do not duct more than one dehumidifier together. See Figure 13-1.

- If using registers and diffusers, the total open area must be at least 255 in² (1645 cm²), which is the equivalent area to a 18 inch (457 mm) round.
- When locating registers and diffusers be aware of the following;
 - Relative to other dehumidifier inlets/outlets – must be a minimum 10 feet (3 m) apart and do not direct toward one another.
 - Relative to HVAC diffusers – ensure minimum 10 foot (3 m) distance from other HVAC diffusers.
 - For agriculture applications – do not directly vent onto plants.
- Ensure that the ductwork is supported within 2 feet (0.6 m) of inlet and outlet of the dehumidifier. Consult building codes and standards for duct support requirements beyond 2 feet (0.6 m) of the dehumidifier.

FIGURE 13-1: DO NOT DUCT MORE THAN ONE DEHUMIDIFIER IN SERIES



90-2576

Duct kit installation

DUCT KIT INSTALLATION

1. Install the round adapter plates onto the inlet and outlet using the #6 (smaller) screws provided. See Figure 14-1.
2. Attach the assembled components to the dehumidifier using the #10 (larger) screws provided. The filter clips must be removed from the inlet side of the dehumidifier, the duct kit will attach using those holes. See Figure 14-2.
3. Install the filter access door and secure with the two thumb screws. See Figure 14-3.

FIGURE 14-1: ALIGN TABS

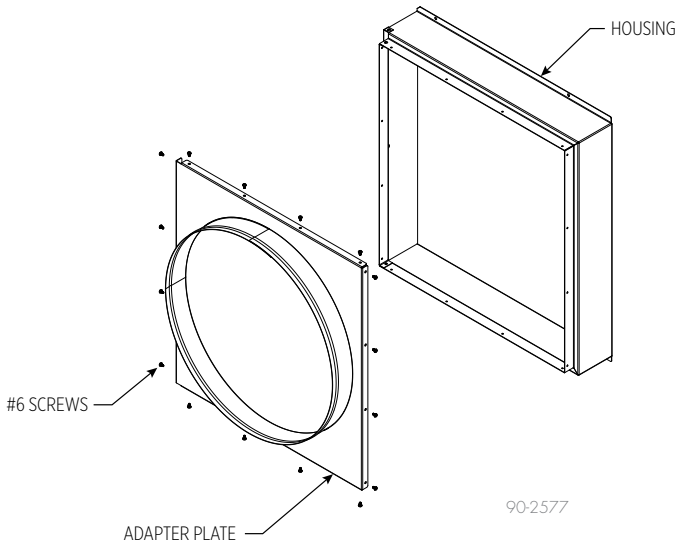


FIGURE 14-2: ATTACH ASSEMBLED DUCT HOUSING

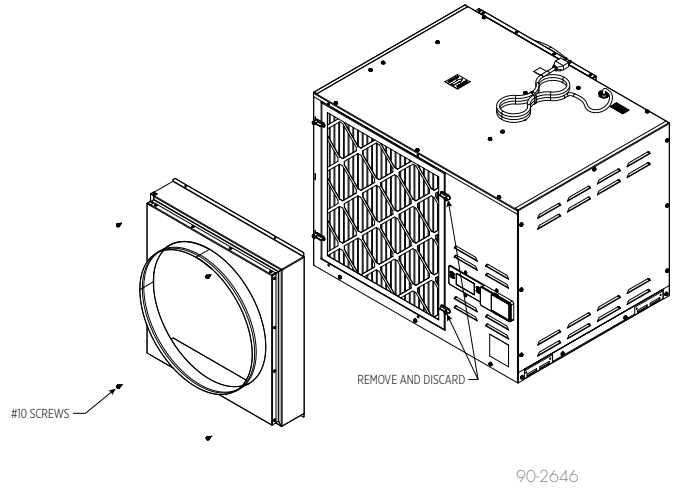
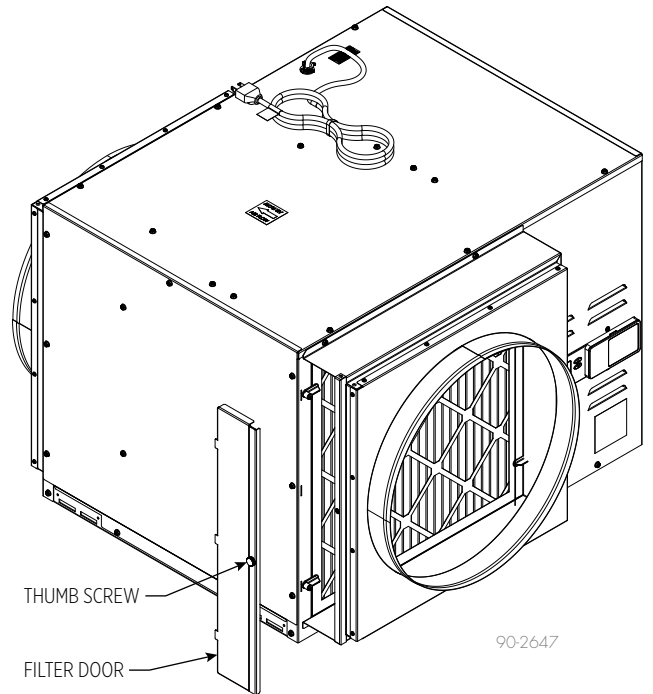


FIGURE 14-3: INSTALL

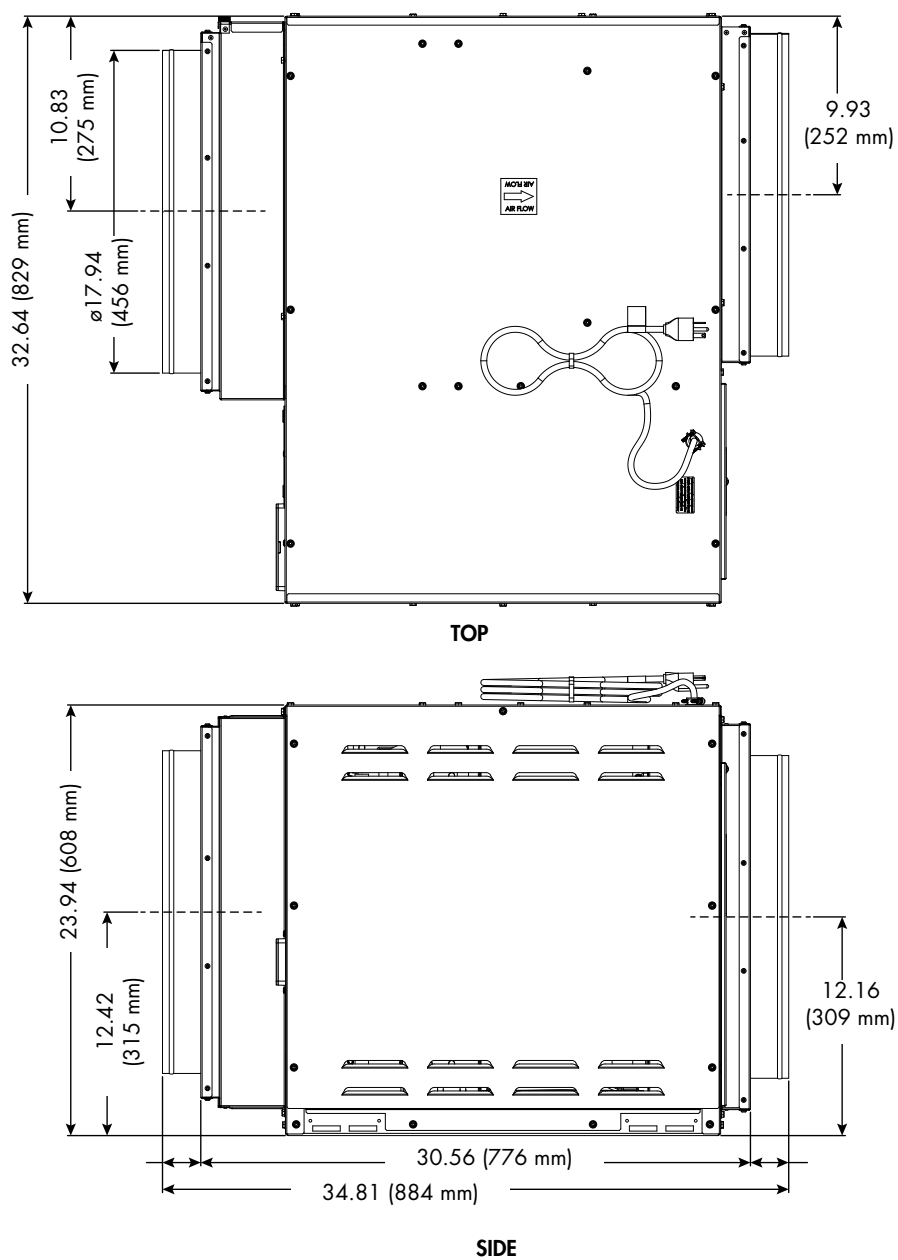


Duct

REPLACING THE FILTER

1. Loosen the two thumb screws and remove the filter access door.
2. Pull the filter away from the unit, then out through the access opening.
3. Install the new filter in the same direction.
4. Reinstall the filter access door and tighten the thumb screws.

FIGURE 15-1: OVERALL DIMENSIONS WITH DUCT KIT (INCHES)



90-2648

Hard wire - line voltage

United States Installation: Make all electrical connections in accordance with the current edition of the NEC ANSI/NFPA 70 and any local codes or ordinances that may apply.

Canada Installation: Make all electrical connections in accordance with the current edition of the Canadian Electrical Code CSA C22.1 and any local codes or ordinances that may apply.

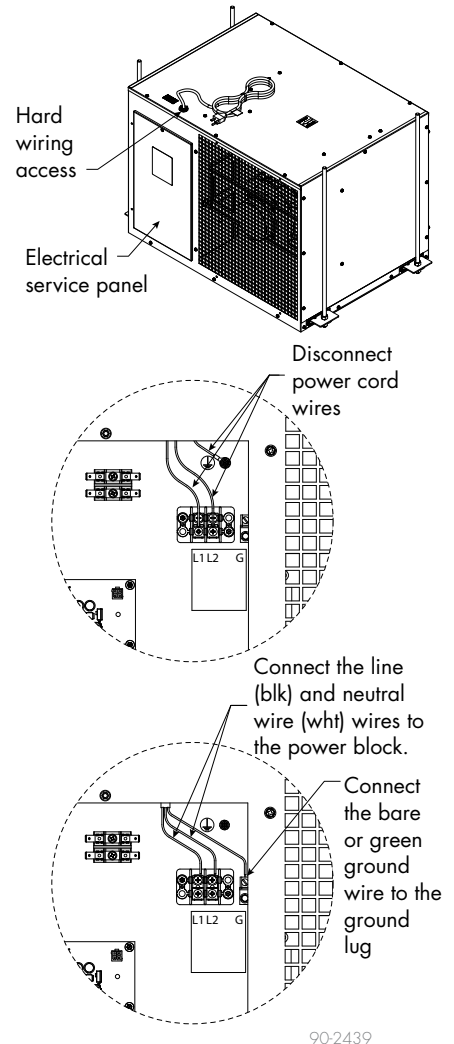
The RL-14, 240V dehumidifier comes with a power cord that has a NEMA 6-20P plug that can simply be plugged into a corresponding NEMA 6-20R receptacle. The RL-14, 277V dehumidifier comes with a power cord that has a NEMA L7-20P plug that can simply be plugged into a corresponding NEMA L7-20R receptacle. The plug can be removed and replaced by hard-wired electrical service if desired.

1. Disconnect electrical service at the main fuse or circuit breaker.
2. Run electrical service to where the dehumidifier is to be installed following all required local and national codes and standards.
3. Remove the electrical service side panel (see Figure 16-1).
4. Loosen the terminal screws securing the power cord wires to the terminal blocks and ground lug.
5. Use channellock pliers to remove the strain relief and power cord from the unit. Pinch the side of the strain relief to release it from the opening in the sheet metal and pull it away from the dehumidifier.
6. Route the service wires through the opening in the dehumidifier and secure the cable or conduit to the opening in the dehumidifier using fittings/clamps intended for the conduit/cable used.
7. Insert the black service wire into the L1 terminal and the white service wire into the L2 terminal. Release levers to lock into place.
8. Insert the ground wire (bare or green) of the electrical service into the ground lug and secure it in place by tightening the ground lug screw.
9. Reattach the electrical service side panel to the dehumidifier.
10. Restore electrical service at the fuse or circuit breaker.

CAUTION

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

FIGURE 16-1: POWER CORD WIRING



90-2439

Table 16-1:
Electrical specifications

	Model RL-14	
Voltage	208-240 VAC, single phase, 60Hz	277 VAC, single phase, 60Hz
Recommended Breaker Size	20A	20A
Recommended Wire Gauge	12 Gauge, Copper	12 Gauge, Copper
Maximum Fuse or Breaker Size (MOC)	30A or lower	20A or lower
Minimum Circuit Ampacity (MCA)	19A at 208V	15A at 277V

Field wiring: control input

Wire a control signal according to the desired control mode. Allowed control signals include:

- **On-board control - default**
No control wiring needed. The dehumidifier will run based on the internal RH sensor and setpoint as set from the on-board keypad. Air Sampling rate and RH offset may be adjusted.
- **DriSteem D77 humidistat (REMOTE)**
The D77 controller will control the dehumidifier based on its own RH sensor and setpoint. Any errors will show on the local control and on the D77 as individual error codes.
- **DriSteem BACnet humidistat (EXTERNAL)**
The BACnet humidistat will use its own RH sensor or a remote duct sensor and its own setpoint to control the dehumidifier on or off via a dry contact on the dehumidifier. The setpoint can be adjusted locally or by BACnet. A single alarm will show for any error on the dehumidifier.
- **External**
Any other humidity control system that has a dry contact, normally open output dedicated to controlling the dehumidifier.

See the appropriate section for wiring the control input and selecting the desired mode of operation.

D77 controller wiring and setup

The Model D77 will measure the relative humidity and turn the dehumidifier on and off to control the humidity level to the desired setting. The humidity setting can be adjusted from the control, while the display allows easy access and monitoring of the humidity level in the space. Shield the Model D77 from direct exposure to HPS or LPS lighting.

NOTE: Use 18-22 AWG wire for control wiring.

Humidity can be controlled using the internal dehumidifier control, a Model D77 control, or a different external control like a thermostat.

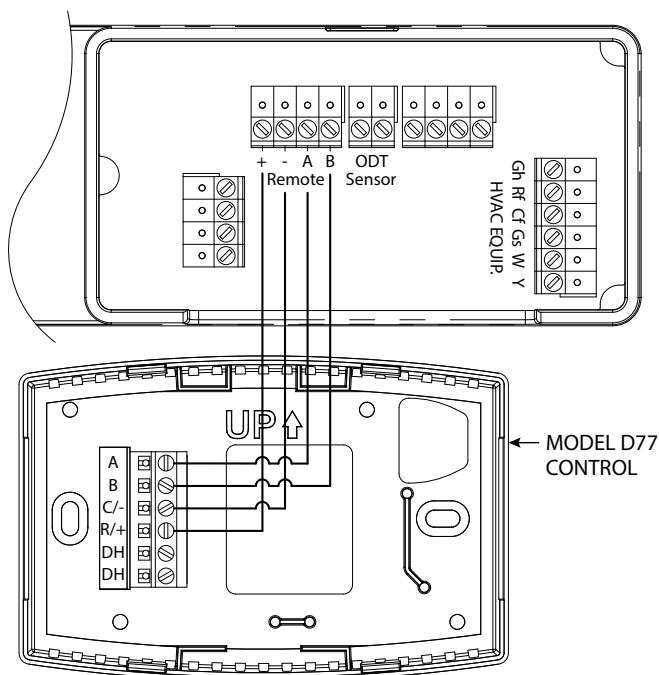
Installing an external control eliminates the need to run the dehumidifier blower for sampling, as the control is constantly measuring the humidity. When the humidity level rises above the setting, the dehumidifier is turned on. With internal control, the sampling rate can be set to 15, 30, 45, or 60 minutes.

TO INSTALL AND USE THE MODEL D77 CONTROL, COMPLETE ALL STEPS:

1. Unplug the dehumidifier or turn off power to the circuit at the breaker or fuse.
2. Run thermostat cable (use 18-22 AWG wire) from the Model D77 to the control of the dehumidifier.
3. Trim about 1/4" (6 mm) of insulation from the end of the wires on each end. Insert the wire into the terminals as shown in Figure 18-1.
4. Restore dehumidifier power.

TO SET THE DEHUMIDIFIER TO USE THE MODEL D77 CONTROL, COMPLETE ALL

FIGURE 18-1: MODEL D77 REMOTE CONTROL WIRING



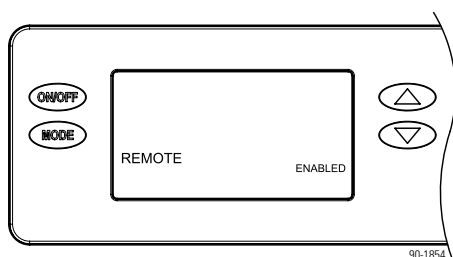
90-2490

D77 controller wiring and setup

STEPS:

1. With power to the dehumidifier, use the ON/OFF button to set the dehumidifier to the OFF position.
NOTE: If the display backlight is not on, the first button press (any button) will only turn the backlight on. Press the button a second time to achieve the desired function.
2. Hold the MODE button on the on-board control for three seconds to enter the Installer Set-up Menu.
3. The display should now read REMOTE on the left and DISABLED on the right. Use the UP or DOWN arrow buttons to set this to ENABLED.
4. Once the display reads REMOTE ENABLED, press the MODE button to cycle through the other settings until the display blinks DONE for three seconds.
5. Use the ON/OFF button to turn the dehumidifier ON. The display on your unit should read REMOTE.
6. Locate the Model D77 that you just set up. On the Model D77, press the ON button and use the arrow buttons to set your preferred %RH setpoint. When setting up in REMOTE mode for the first time, your dehumidifier will wait three minutes before starting to dehumidify, regardless of ambient conditions.

FIGURE 19-1: MODEL D77 REMOTE CONTROL WIRING



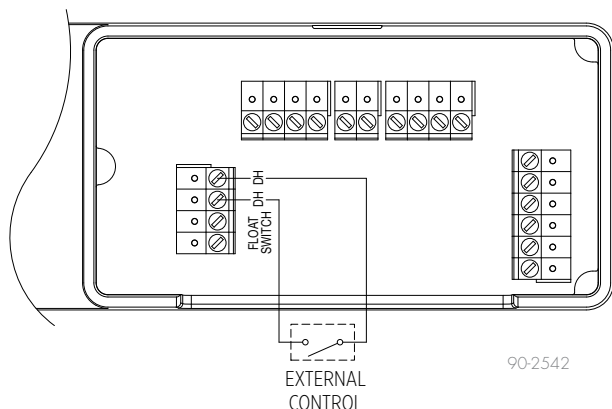
Alternative external control or DriSteem BACnet® humidistat

The DriSteem BACnet humidistat may be used to control the dehumidifier when set up as an external controller. Alternatively, use any other humidity control system as long as it has a dry contact, normally open output dedicated to controlling the dehumidifier. Reference the installation literature provided with the alternative control for wiring, set-up, and operating details.

TO INSTALL AND USE AN EXTERNAL CONTROL, COMPLETE ALL STEPS:

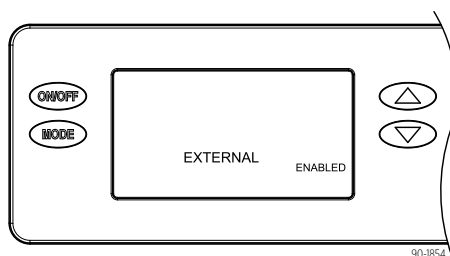
1. Unplug the dehumidifier or turn off power to the circuit at the breaker or fuse.
2. Run thermostat cable (use 18-22 AWG wire) from the alternative external control to the control of the dehumidifier.
3. Trim about 1/4" (6 mm) of insulation from the end of the wires on each end. Insert the wire into the terminals as shown in Figure 20-1.
4. Restore dehumidifier power.

FIGURE 20-1: EXTERNAL CONTROL WIRING



TO SET THE DEHUMIDIFIER TO USE THE ALTERNATIVE CONTROL, COMPLETE ALL STEPS:

1. With power to the dehumidifier, use the ON/OFF button to set the dehumidifier to the OFF position.
NOTE: If the display backlight is not on, the first button press (any button) will only turn the backlight on. Press the button a second time to achieve the desired function.
2. Hold the MODE button on the on-board control for three seconds to enter the Installer Set-up Menu.
3. Press MODE again and the display should change to EXTERNAL in the center, and DISABLED on the right. Use the UP or DOWN arrow buttons to set this to ENABLED.



4. Once the display reads EXTERNAL ENABLED, press the MODE button to cycle through the other settings until the display blinks DONE for three seconds.
5. Use the ON/OFF button to turn the dehumidifier ON. The display on your unit should read external. Even if there is a demand for dehumidification according to your external control, the dehumidifier will wait three minutes before turning on for the first time only.

Daisy chain wiring

DriSteem dehumidifiers can be wired in a daisy chain application, allowing one Model D77 or alternate dry contact humidistat to control any number of dehumidifiers wired together.

MODEL D77 AS DRIVING CONTROL

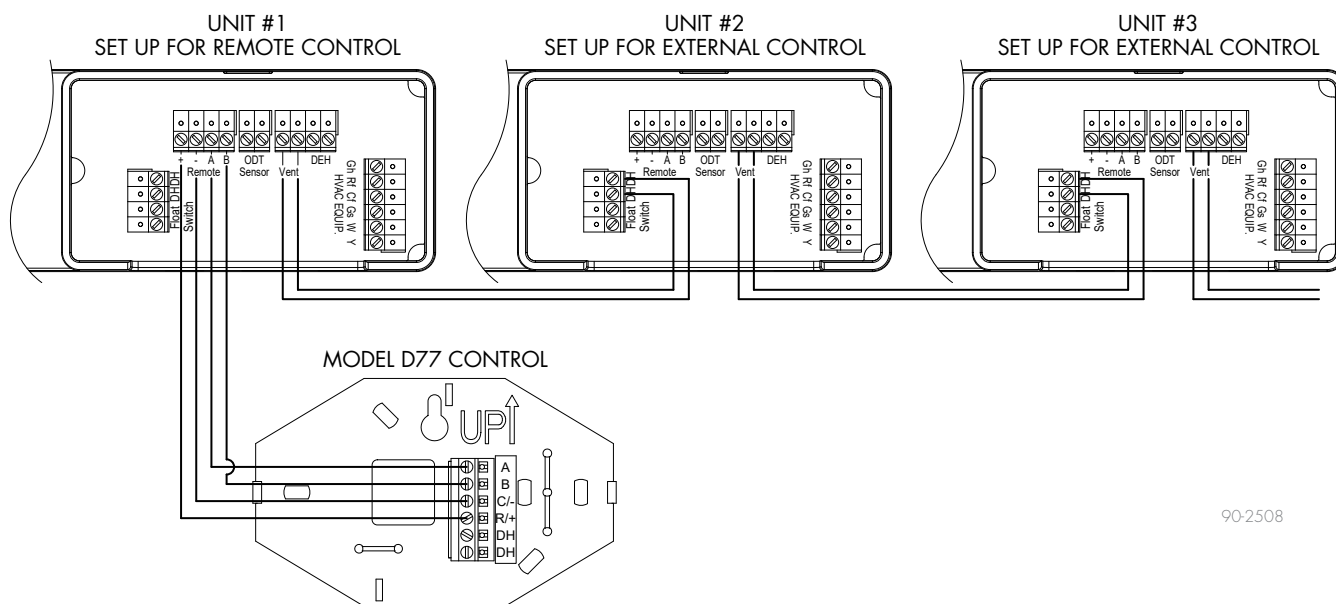
When a Model D77 is used to control the first dehumidifier, Unit #1 must be set to Remote Enabled in the set-up menu. All downstream units must be set up to External Enabled in each set-up menu. See pages 18 through 20 for set up details, and wire as shown in Figure 21-1.

SEQUENCE OF OPERATION

Each unit in the daisy chain responds to the first unit being controlled by the D77. When the humidity level rises above the humidity setting, all units will dehumidify until the humidity measured by the D77 falls below the setting.

IMPORTANT: If the D77 or first dehumidifier experiences a fault or loses power, all downstream dehumidifiers will also stop function. If any dehumidifier in the daisy chain other than Unit #1 experiences a fault, that unit will stop operation as determined by the fault but all other units will continue operating. If any dehumidifier loses power, all downstream units will stop operating.

FIGURE 21-1: WIRING WITH D77 CONTROL



90-2508

Daisy chain wiring

ALTERNATE EXTERNAL OR DRISTEEM BACNET HUMIDISTAT DRY CONTACT CONTROL AS DRIVING CONTROL

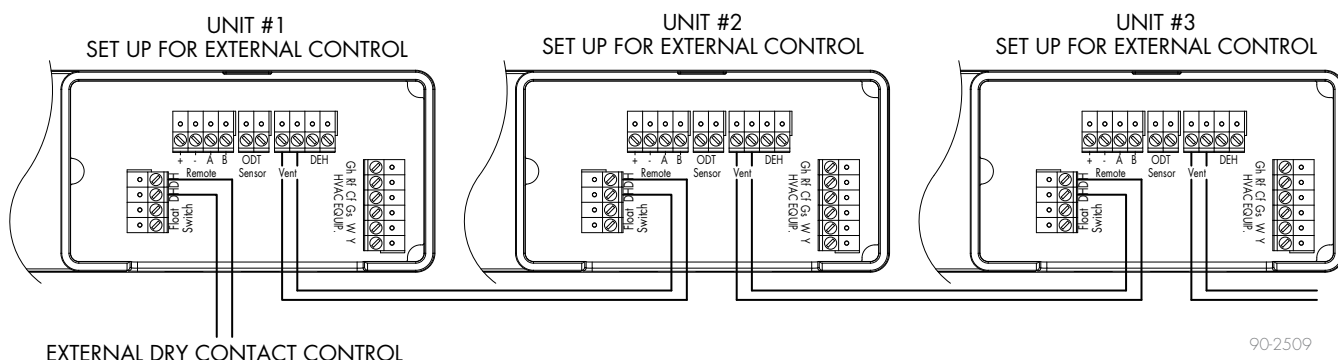
When a dry contact control is used to control the first dehumidifier, Unit #1 must be set to External Enabled in the set-up menu. All downstream units must be set up to External Enabled in each set-up menu. See page 20 for set up details and wire as shown in Figure 22-1.

SEQUENCE OF OPERATION

Each unit in the daisy chain responds to the first unit being controlled by the external control. When the humidity level rises above the humidity setting, all units will dehumidify until the humidity measured by the external control falls below the setting.

IMPORTANT: If the external control experiences a fault, all downstream dehumidifiers will also stop function. If any dehumidifier experiences a fault, that unit will stop operation as determined by the fault but all other units will continue operating. If any unit loses power, all downstream units will stop function.

FIGURE 22-1: WIRING WITH ALTERNATE EXTERNAL CONTROL



90-2509

CODES (LOCATED ON BACK OF WIRE ACCESS COVER)

See the Installation Instructions for troubleshooting error codes. For additional assistance, call Technical Support at (800) 328-4447.

Contact Technical Support before replacing the unit or components and for additional troubleshooting.

Table 22-1:
Codes

Error Code	Failure Mode
E1	Internal %RH/Temperature Sensor Failure
E3	Model D77 Remote Control Communication Loss
E4	Insufficient Capacity
E5	High Temperature Thermistor Failure
E6	Low Temperature Thermistor Failure
E7	Float Switch Open
E8	Inlet Air Temperature Out of Range

System set-up & checkout

INSTALL 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.

1. If the dehumidifier is not already OFF, press the ON/OFF button to turn it off. See Figure 25-1.
2. Press and hold the ON/OFF button and MODE buttons for 3 seconds. The measured humidity, AIR SAMPLING and TEST will show on the display. See Figure 23-1.
3. After three (3) minutes the dehumidifier compressor will turn on and DEHUMIDIFYING will replace AIR SAMPLING on the control screen. See Figure 23-2.
4. 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. See Figures 23-3 and 25-1.

FIGURE 23-1: AIR SAMPLING

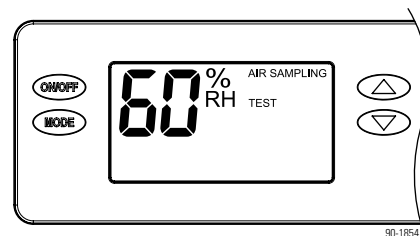


FIGURE 23-2: DISPLAY SCREEN DONE

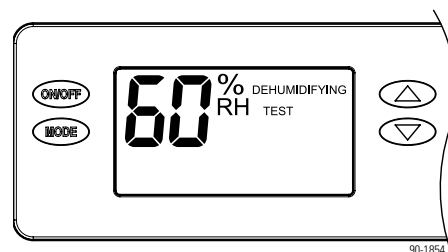
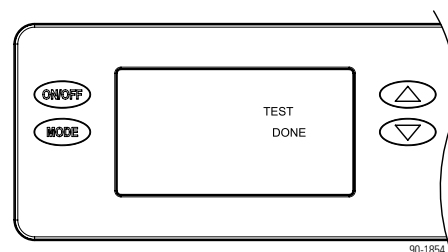


FIGURE 23-3: TEST DONE



Operating the dehumidifier

USING THE DEHUMIDIFIER ON-BOARD CONTROL

1. Press the ON/OFF button to turn the dehumidifier control ON. The display will show the current setting, and the dehumidifier blower will turn on to start sampling the air.
The setting will be replaced by the measured humidity and "AIR SAMPLING" will show on the display.
2. Use the UP or DOWN button to adjust the humidity setting as desired.
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 "AIR SAMPLING" will be replaced by "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 after the number of minutes selected during the Air Sampling portion of the System Set Up, or any time the humidity setting is lowered.

USING THE MODEL D77 CONTROL

1. Press the ON/OFF button to turn the dehumidifier control ON. "REMOTE" will show on the display to indicate that an external control is wired to the dehumidifier.
2. At the Model D77, press the ON button; the Model D77 will display the measured RH.
3. Use the UP or DOWN button on the Model D77 to adjust the humidity setting as desired.
4. If the RH measured by the Model D77 rises above the setting, the dehumidifier will turn on. "DEHUMIDIFYING" will appear on the dehumidifier control display to show that the Model D77 is calling for dehumidification. The dehumidifier will turn off when the RH measured by the Model D77 drops 3% RH below the setting.

FIGURE 24-1: DEHUMIDIFIER CONTROLLER

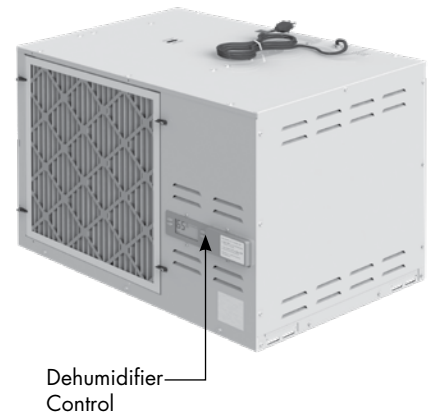


FIGURE 24-2: MODEL D77 CONTROLLER



Changing Air Sampling and RH offset for on-board control

1. Check all power wiring.
2. Make sure the wire access cover has been snapped back onto the on-board control.
3. Plug unit in and turn power switch to ON.
4. The on-board control screen should display OFF (see Figure 25-1).

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.

5. Hold the MODE button on the on-board control for 3 seconds to enter the Installer Set-up Menu.
6. Navigate through the following screens to set up the dehumidifier for the installed application.

Use the UP or DOWN arrows to select items and use MODE to switch to the next set-up option. To exit installer set-up, all options must be scrolled through using the MODE button.

7. After the installer set up options have been completed, DONE (see Figure 25-2) will blink for 3 seconds and the control will return to the OFF screen (see Figure 25-1).

If remote control and external control are both disabled (default), the control will be by the on-board controller. Air sampling and RH Offset are MODE options only available with on-board control.

AIR SAMPLING

Use the UP or DOWN button to adjust how frequently the dehumidifier samples the air to determine whether or not to dehumidify. Fewer minutes means the dehumidifier will sample more frequently to minimize humidity swings, but increases cost to operate due to more frequent fan operation. Press MODE when done to move to the next screen (see Figure 25-3).

RH OFFSET

An offset can be applied to the on-board humidity reading to avoid discrepancies with other humidity measuring devices. Use the UP/DOWN arrows to select an offset from -5% to 5%. Press MODE to exit the installer set-up screens (see Figure 25-4).

FIGURE 25-1: DISPLAY SCREEN OFF

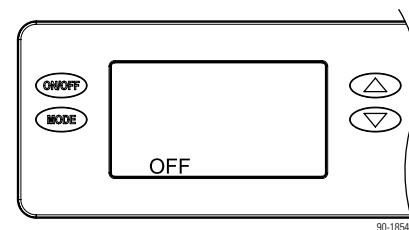


FIGURE 25-2: DISPLAY SCREEN DONE

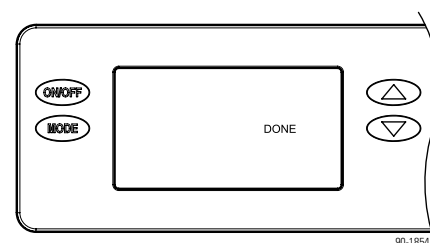


FIGURE 25-3: AIR SAMPLING

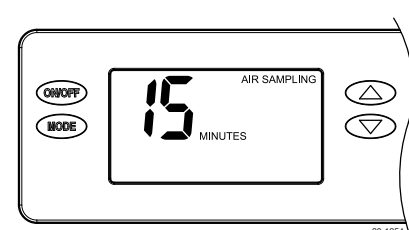
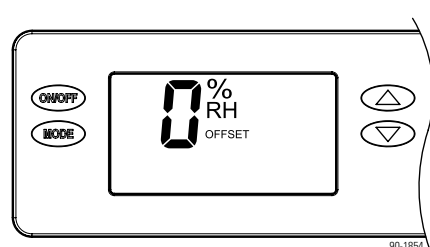
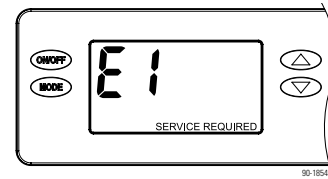


FIGURE 25-4: RH OFFSET



Troubleshooting

For assistance, call Technical Support at (800) 328-4447. 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 control screen. If an Alert Light (part # 601176) is used, the light will turn on when an error occurs.

Table 26-1:
Diagnostic Codes

Diagnostic Code	Failure Mode	Action	Reset
E1	Internal Humidity or Temperature Sensor Open or Shorted	If connection okay, replace User Interface.	Cycle Power
E3	Model D77 Remote Control Communication Loss	<ul style="list-style-type: none"> Check connections between Model D77 and dehumidifier control board. Terminals should be fully inserted and secured in the control board and Model D77 control terminals. If connections are correct and secure, turn off the dehumidifier and remove the Model D77. Use a short section of 4-wire cable to reconnect the Model D77 to the control board. Turn the dehumidifier back on and decrease the humidity setting below ambient conditions on the Model D77. If the dehumidifier turns on, the problem is with the wiring between the dehumidifier and control. If the dehumidifier does not turn on, call Technical Support. 	Self-Correcting
E4	Insufficient Capacity	<ul style="list-style-type: none"> Check the frost sensor connection at the power board. Terminal should be fully seated on the power board pins. Remove the side access panel and verify that the sensor is secured to the suction line. If the sensor is connected and secured to the refrigeration line proceed to the next step. Reset the fault by cycling power to the dehumidifier. Turn the humidity setting down (below room/home humidity level) to make a dehumidification call. Allow the fan and compressor to run for approximately 10-15 minutes and then enter diagnostic test mode by simultaneously pressing the UP ARROW and MODE buttons for 3 seconds. The LCD will display the temperature measured by the internal sensor while also displaying AIR SAMPLING and ON, the humidity measured by the internal sensor while also displaying %RH and ON, and the frost sensor temperature while also displaying ON. Scroll through these values by using the UP/DOWN arrow buttons. Record values and call Technical Support. 	Cycle Power

Troubleshooting

Table 27-1:
Diagnostic Codes (continued)

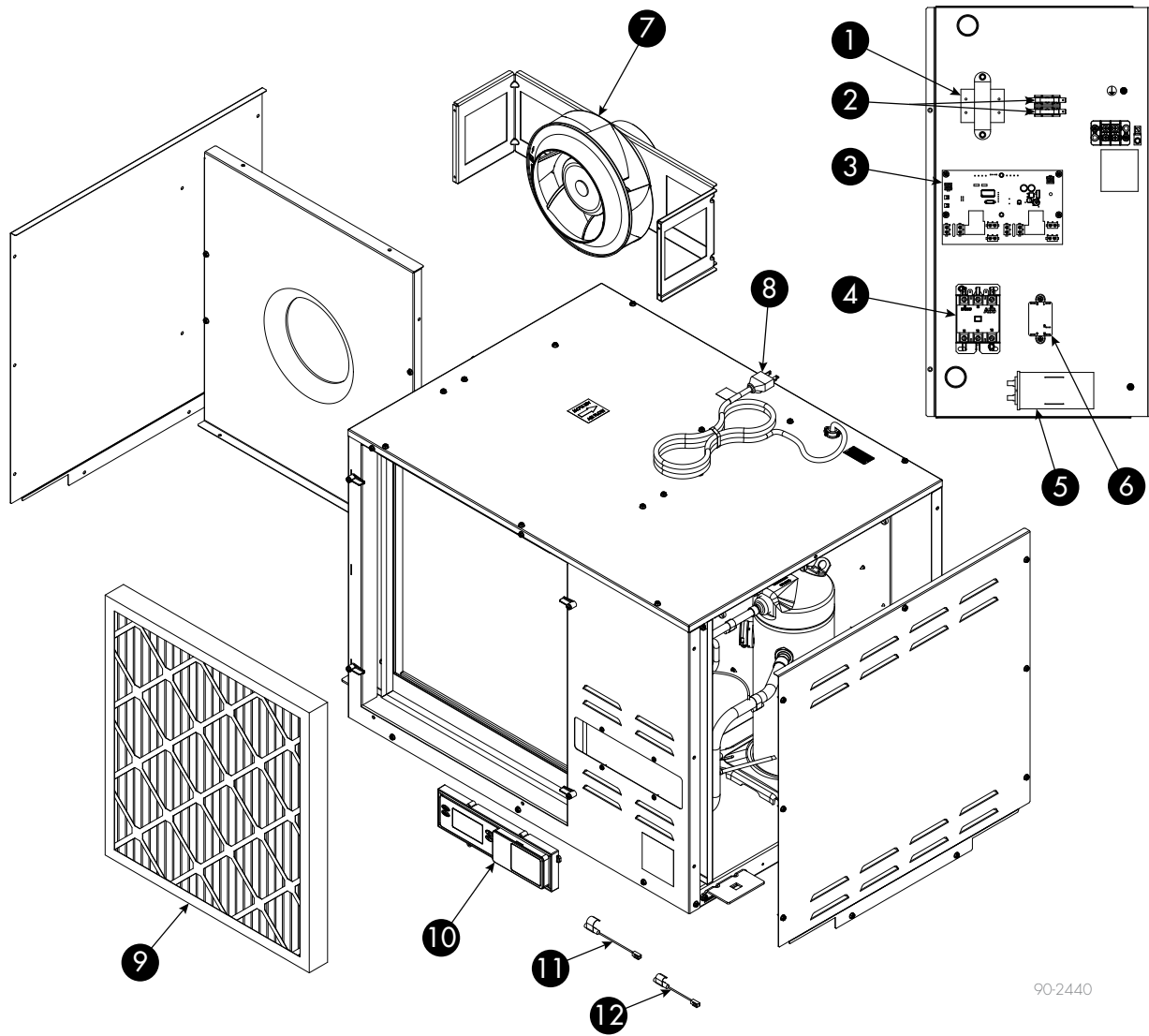
Diagnostic Code	Failure Mode	Action	Reset
E5	High Temperature Thermistor Failure	<ul style="list-style-type: none"> • Check the high temperature sensor connection at the power board. Terminal should be fully seated on the power board pins. • Remove the side access panel and verify the sensor is not damaged and connected to the refrigeration line coming from the compressor. • If the sensor is connected and secured to the refrigeration line, it may need to be replaced. Contact Technical Support to confirm. 	Cycle Power
E6	Low Temperature Thermistor Failure	<ul style="list-style-type: none"> • Check the low temperature sensor connection at the power board. • Remove the side access panel and verify the sensor is not damaged and connected to the suction line. • Terminal should be fully seated on the power board pins. • If the sensor is connected and secured to the refrigeration line, it may need to be replaced. Contact Technical Support to confirm. 	Self-Correcting
E7	Float Switch Open	<ul style="list-style-type: none"> • Empty the condensate pan. • Check the float switch connection at the control board. • If not using a float switch, verify jumper is between float switch terminals on dehumidifier control board. • If the problem persists, replace the float switch. 	Self-Correcting
E8	Inlet Air Temperature Out of 50°F – 104°F (10°C - 40°C) Range or Dew Point Below 40°F (4.4°C)	<ul style="list-style-type: none"> • Verify all ductwork is properly sealed. • If no signs of leak points, contact Technical Support. 	Self-Correcting

Troubleshooting

Table 28-1:
Troubleshooting

Symptom	Possible Reason	Troubleshooting Procedure
Dehumidifier does not turn on/run.	No power to unit.	<ul style="list-style-type: none"> • Check that the dehumidifier is plugged in. • Check that the power switch is turned ON. • Check that the control 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 too high.	<ul style="list-style-type: none"> • Check dehumidifier air filter and replace if necessary. • Check for blocked duct work and clear.
Dehumidifier blower is running but compressor is not.	Float switch open.	<ul style="list-style-type: none"> • If float switch installed, check connections at control board and empty condensate pan. • If no float switch installed check that the jumper is installed at the float switch terminals on the control board.
	Coil frosting – defrost.	<ul style="list-style-type: none"> • Lack of or reduced airflow. Check dehumidifier air filter and replace if necessary. • Check for blocked duct work. • Inlet air conditions below 60°F (15.6°C). Increase the humidity setting.
	Inlet air temperature is outside of the 50°F – 104°F (10°C - 40°C) range or the dew point is below 40°F (4.4°C) and there is a demand for dehumidification.	<ul style="list-style-type: none"> • Verify all ductwork is properly sealed.
Dehumidifier is not draining properly.	Drain line blocked or unit not level.	<ul style="list-style-type: none"> • Verify that the unit is level. • Check the drain line blockages and for a continuous downward slope.
Dehumidifier is producing hot air.	Normal function.	<ul style="list-style-type: none"> • Air is reheated across the condenser coil, resulting in a temperature rise between inlet and outlet, this is normal.

Model RL-14

FIGURE 29-1: CDS DEHUMIDIFIER, RL 14 REPLACEMENT PARTS

90-2440

Model RL-14

Table 30-1:
Replacement Parts

Part number	Part Description	Part No.
1	Transformer, 40VA, 208-240V	601156-001
	Transformer, 40VA, 277V	601156-002
2	Fuse, 1A, Slow-Blow	601189
3	Internal Power PCB	601190
4	Compressor Contactor	601159
5	Compressor Run Capacitor (45MFD, 370VAC), 208-240V	601191
	Compressor Run Capacitor (60MFD, 370VAC), 277V	601192
6	Fan Relay	601160
7	Fan Assembly	601193
8	Cord, SJT 12/3, 6-20P, 208-240V	601194
	Cord, SJT 12/3, 17-20P, 277V	601195
9	Filter, MERV 11, (6 pack)	601196
10	User Interface	601197
11	Low Temperature Sensor	601203
12	High Temperature Sensor	601202
Not Shown		
	D77, Digital Dehumidifier Control	601171
	P-Trap Kit	601172
	Fitting, 3/4" MNPT x 3/4" BARB, PVC	601173
	Drain Tubing, 3/4" ID x 10' L	601174
	Leveling Feet	601175
	Alert Light	601176
	RL-14 Duct Kit	601198
	Hanging Bracket Kit	601199

Notes

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