



⚠ CAUTION!

TROUBLESHOOTING SHOULD BE PERFORMED BY A QUALIFIED HVAC TECHNICIAN.

Symptom	Possible Reason	Troubleshooting Procedure
Neither fan nor compressor running. Dehumidification is being called for.	<ol style="list-style-type: none"> 1. Dehumidifier unplugged or no power to outlet. 2. Humidity control set too high. 3. Loose connection in internal or control wiring. 4. Defective compressor relay. 5. Defective control transformer. 	<p>⚠WARNING! ELECTRICAL SHOCK HAZARD: Electrical power must be present to perform some tests. These tests should be performed by a qualified service person. Troubleshooting Procedure for Control Related Issues This method of diagnosis will test the 3 main components of the control circuit individually to indicate any potential problems. This is to be used when the control will not activate the main unit.</p> <ol style="list-style-type: none"> 1. Detach field control wiring connections from the terminals on the main unit. 2. Connect the 24V and FAN terminals together; only the fan should run. Disconnect the terminals. 3. Connect the 24V and DEHU terminals together; fan and compressor should run. Disconnect the terminals. 4. If this test works, the main unit is working correctly from a control standpoint. 5. Reconnect field control wiring to the terminals on the main unit. 6. Remove the control panel cover and detach the field wiring from the control connections. 7. Connect the 24V and FAN terminals together; only the fan should run. Disconnect the terminals. 8. Connect the 24V and DEHU terminals together; fan and compressor should run. Disconnect the terminals. 9. If this test works, then the field control wiring is ok. 10. If the problem persists, then the control is most likely faulty.
Compressor is not running. Dehumidification is being called for. Fan is running.	<ol style="list-style-type: none"> 1. Defective compressor run capacitor. 2. Loose connection in compressor circuit. 3. Defective compressor overload. 4. Defective compressor. 5. Defrost thermostat open. 	
Compressor cycles on and off. Dehumidification is being called for.	<ol style="list-style-type: none"> 1. Low ambient temperature and/or humidity causing unit to cycle through defrost mode. 2. Defective compressor overload. 3. Defective compressor. 4. Defrost thermostat defective. 5. Dirty air filter(s) or air flow restricted. 6. Defective fan or relay. 	
Fan is not running. Dehumidification or fan is being called for.	<ol style="list-style-type: none"> 1. Loose connection in fan circuit. 2. Obstruction prevents fan impeller rotation. 3. Defective fan. 4. Defective fan relay. 	



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Symptom	Possible Reason	Troubleshooting Procedure
Low dehumidification capacity (evaporator is frosted continuously). Dehumidification is being called for.	<ol style="list-style-type: none"> Defrost thermostat loose or defective. Low refrigerant charge. Dirty air filter(s) or air flow restricted. Excessively restrictive ducting connected to unit. 	<p>WARNING! ELECTRICAL SHOCK HAZARD: Electrical power must be present to perform some tests. These tests should be performed by a qualified service person. Troubleshooting Procedure for Control Related Issues This method of diagnosis is used to function check the internal components in the dehumidifier. This is to be used when a performance issue is suspected.</p> <ol style="list-style-type: none"> Set the humidity controller all the way to the most humid setting or off position – Did the unit shut off? If yes, turn the fan setting to the ON position – does the fan start? If fan starts, leave in the fan ON position and set the humidity all the way to driest setting. May have to wait 5 minutes for the compressor to start. Listen for a distinct buzzing/humming sound of a compressor starting up – do you hear this noise? If compressor is running and continues to run, after about 15 minutes you should feel a slight increase in air temperature being discharged out of the discharge air side of the unit. If so, depending on your environmental conditions (temp/Rh%), you should see some water production out of the hose within 30 minutes or so. (Note: If the room temperature is 55 degrees or below and/or in area of low relative humidity, the dehumidifier will produce little to no water.) Collecting the water removed in a 24 hour period will give a measurement of performance.
No ventilation. Ventilation is being called for.	<ol style="list-style-type: none"> Loose connection in ventilation control circuit. Loose connection in damper power circuit. Defective outdoor air damper. 	
Dehumidifier removes some water, but not as much as expected.	<ol style="list-style-type: none"> Air temperature and/or humidity have dropped. Humidity meter and or thermometer used are out of calibration. Unit has entered defrost cycle. Dirty air filter(s) or air flow is restricted. Defective defrost thermostat. Low refrigerant charge. Air leak such as loose cover or ducting leaks. Defective compressor. Restrictive ducting. 	

Refrigerant Charging

⚠ WARNING!

SERVICING THE SANTA FE ULTRA70 WITH ITS HIGH PRESSURE REFRIGERANT SYSTEM AND HIGH VOLTAGE CIRCUITRY PRESENTS A HEALTH HAZARD WHICH COULD RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR PROPERTY DAMAGE. SERVICE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN.

If the refrigerant charge is lost due to service or a leak, the leak should be repaired and a new charge must be accurately weighed in. If any of the old charge is left in the system, it must be recovered before weighing in the new charge. Refer to the unit nameplate for the correct charge weight and refrigerant type.



Wiring Controls

The Santa Fe Ultra70 features a built-in dehumidistat control as well as the ability to wire a separate remote mounted control to the unit.

If using the built-in dehumidistat to control the unit, locate the unit in an location where it can accurately sense the humidity of the area where humidity control is desired. Adjust the humidity control so that the unit maintains the desired level of humidity.

If the Santa Fe Ultra70 is located outside of the area where humidity control is desired, consider using a remote wired humidity controller that is located in the area where humidity control is desired. In this configuration the built in dehumidastat should be set to off. Santa Fe offers the DEH 3000 proprietary remote mounted control. The DEH 3000 monitors and controls relative humidity and proper ventilation levels in their home. This control is also available in a version that has remote sensing capability called the DEH 3000R.

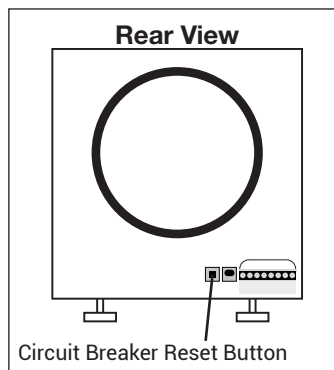
NOTE: The DEH 3000 is sold separately. Other thermostats are compatible with the Santa Fe Ultra70.

CAUTION!

DO NOT ALLOW THE 24V TERMINAL FROM THE SANTA FE ULTRA70 TO CONTACT THE COM TERMINAL ON THE SANTA FE ULTRA70 OR DAMAGE TO THE TRANSFORMERS WILL RESULT.

a. Circuit Breaker

To prevent damage to the 24 volt control transformer, the Santa Fe Ultra70 comes with a resettable circuit breaker. Check wiring for any electrical short and repair before resetting breaker. Resetting the circuit breaker without correcting the electrical short may result in transformer damage. Be sure to check the electrical schematic in this manual or inside the access panel of the Santa Fe Ultra70 before making any control connections. The reset button for the circuit breaker can be found on the back of the unit.



b. Control Connections

The control and the Santa Fe Ultra70 are labeled to prevent confusion. Depending on the control, some of the screw terminals on the Santa Fe Ultra70 may not be used. Be sure to consult the electrical schematic in this manual or inside the access panel of the Santa Fe Ultra70 before making control connections.





Terminal Block Control Operation

COM	24VAC Power Transformer Neutral Side
FAN	Fan Control
24V	Transformer High Side
DEHU	Dehumidification (Fan and Compressor) Control
Float	External Low Voltage Float Switch or Water Sensor (Use Normally Closed Switch)
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Between the COM lead and the 24V TERMINAL is a 40VA transformer. This low voltage power source powers the relay coils which control the fan and compressors. This 24VAC transformer can also be used to power HVAC accessories external to the dehumidifier.

Compressor ON/Fan On	Make contact between 24V and DEHU terminals
Compressor OFF/Fan On	Make contact between 24V and FAN terminals
Power HVAC Accessory	Connect the accessory to the COM and 24V terminals

NOTE: 18 gauge wire needed between the Santa Fe Ultra70 dehumidifier and the external control.