



# DCC-2200 / DCC-2300 CLIMATE CONTROL MODULE for Vintage Air Gen II Modules

**TO AVOID DAMAGE TO GEN II UNIT, READ IMPORTANT NOTE IN INSTALLATION INSTRUCTIONS BEFORE BEGINNING INSTALLATION!!!**

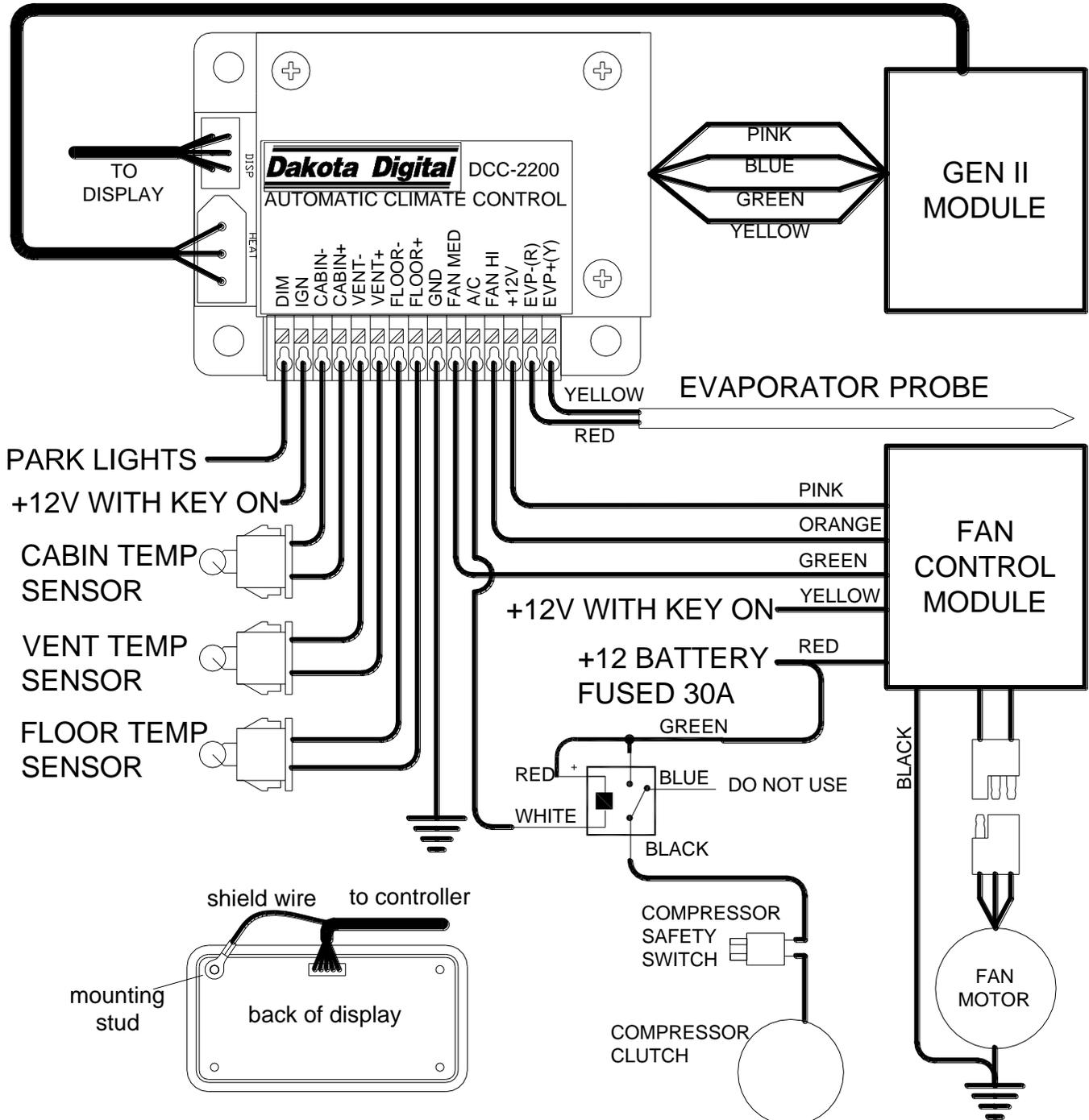
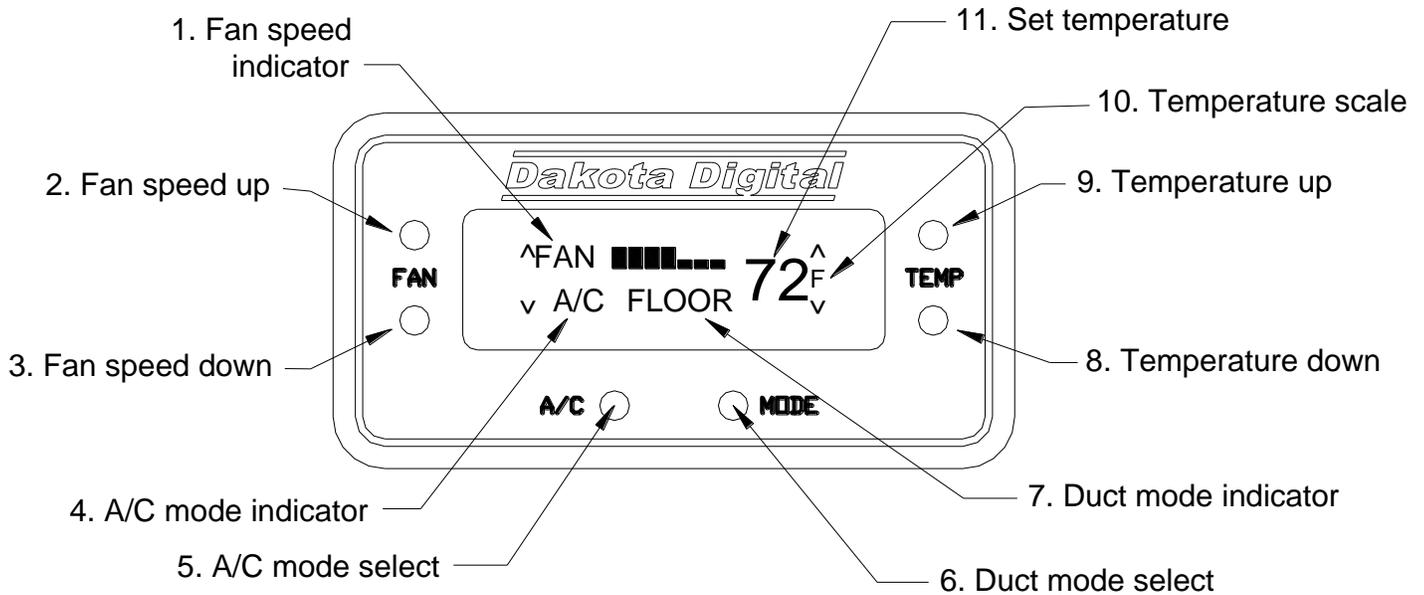


Figure 1: Wiring diagram

# CLIMATE CONTROL DISPLAY



## 1. Fan speed indicator

This portion of the display indicates the currently selected fan speed. When the climate control unit is off it will read as "FAN OFF". In manual speed selection mode there are 7 speeds depicted by an increasing number of large blocks. When all 7 large blocks are showing, the fan is at the highest speed. The next upper fan button press will then place the fan into auto mode, depicted "FAN AUTO". Here the fan speed is automatically set as needed.

## 2. Fan speed up

Pressing the fan speed up button will increase the speed of the fan. If the unit is off, pressing this button turns the unit on. If pressed when the fan is at the fastest setting, the fan will be put in auto mode.

## 3. Fan speed down

Pressing this button will remove the fan from auto operation and decrease fan speed with each press. When fan is at lowest setting, pressing fan speed down button will turn the unit off.

## 4. A/C mode indicator

This indicator displays if the air conditioner is turned on or off. If the air conditioner is on, "A/C" is displayed. "ECON" is displayed when it is off.

## 5. A/C mode select

Pressing this button toggles the air conditioning between on and off. Hold this button while turning the key on to get to the setup menu.

## 6. Duct mode select

Pressing this button moves through the different modes of the Gen II module ductwork. The order of modes is

FLOOR	air is blown out the floor vents of ductwork
BiLev	air is blown out of the vents and onto the floor
DEF	air is blown onto windshield (May be disabled if duct has no defrost. See setup)
VENT	all air is blown out the vents

## 7. Duct mode indicator

This indicator displays the current duct mode. These modes are listed and described above.

## 8. Temperature down

Pressing this button decreases the set cabin temperature. The minimum controlled temperature is 60°F or 15°C. Pressing the temperature down button again at the minimum controlled temperature changes the temperature to 55°F or 13°C. At this setting, the temperature is no longer controlled and the air conditioning is at maximum. This is useful for quickly cooling a hot cabin.

## 9. Temperature up

Pressing this button increases the set cabin temperature. The maximum controlled temperature is 85°F or 29°C. Pressing the temperature up button again at the maximum controlled temperature changes the temperature to 90°F or 32°C. At this setting, the temperature is no longer controlled and the heat is on maximum. This is useful for rapidly heating the cabin.

## 10. Temperature scale

This signifies the current temperature scale in use. To change the temperature scale, see setup instructions.

## 11. Set temperature

This displays the current set cabin temperature. This is the goal temperature the unit attempts to maintain.

## SETUP

The setup menu allows customization of the climate control system and viewing of system information. Use the following steps for making changes to the setup.

1. Start with the key OFF.
2. Press and hold MODE button then turn the key to on.
3. The setup screen will appear with "EXIT SETUP" highlighted at the top.
4. Use the FAN up and down button to select the desired setup option (Selected option is highlighted).
5. Press the TEMP up or down button to change settings for selected option
6. To leave setup turn the key off or select "EXIT SETUP" and press TEMP up or down

The available options in the setup menu in order from top to bottom are:

### EXIT SETUP

This option allows exit from the setup menu by pressing either the TEMP up or down buttons when EXIT SETUP is highlighted. Setup may also be exited at any point by turning the ignition off.

### TEMP SCALE

This option selects how the temperature is displayed. Selecting F displays temperatures in Fahrenheit. Selecting C displays temperatures in Celsius.

### AUTO HIGH

This option regulates the use of high speed when the fan is in auto mode. When set to ON, the fan is allowed to go into high speed when needed. If set to OFF, the fan will not go into high mode with fan in auto. High fan speeds may still be achieved by manually setting the fan speed to high. This option is provided to allow the cabin noise from the high fan to be reduced. It is important to note that, depending on the vehicle, the system may have difficulty maintaining the desired temperature without the fan high speed.

### DEF

This option allows defrost to be turned off for Gen II modules that do not have defrost capability. Use the ENABLED setting for systems equipped with defrost. Use the DISABLED setting if defrost is not available.

### MIN AC TMP

This option allows the minimum evaporator temperature to be set. If the GEN module freezes up, setting this to a higher temperature should fix the problem. This setting is always displayed in degrees Fahrenheit.

### CAB SIZE

This option sets the size of the vehicle. The three options are SML (small), MED (medium), LRG (large). This setting effects how tightly the temperature is controlled. The small setting keeps the temperature within a much smaller range around the set point but may toggle between heating and cooling and use more of the high fan setting in a larger cabin. The large cabin setting allows for a little more difference from the set temperature but will do less "hunting" for the set temperature in the large cabins. Set this according to preference for your vehicle.

### VER

This menu option allows viewing of software code versions for the climate control system. The technician may need these version numbers to troubleshoot problems with the system.

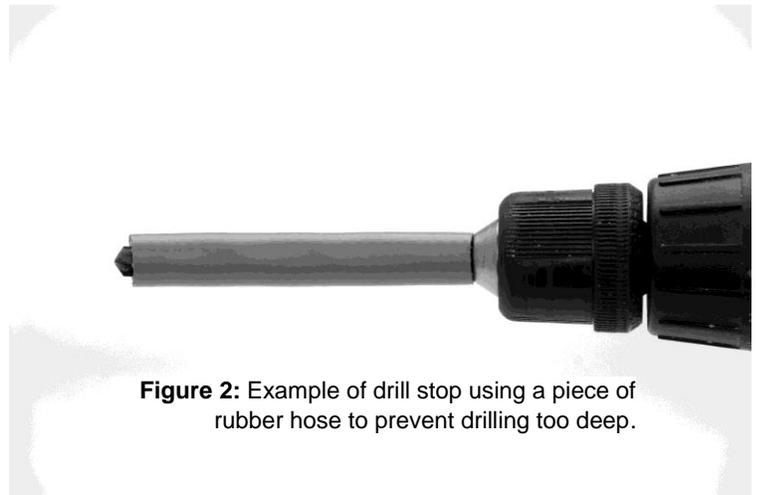
## INSTALLATION

The DCC-2200/2300 is designed to work with the GEN II module from Vintage Air. See the Vintage Air manual for the installation instructions for the GEN II module. If the GEN II module is not yet installed, it may be easier to put the temperature sensors into the module before installing it into the vehicle.

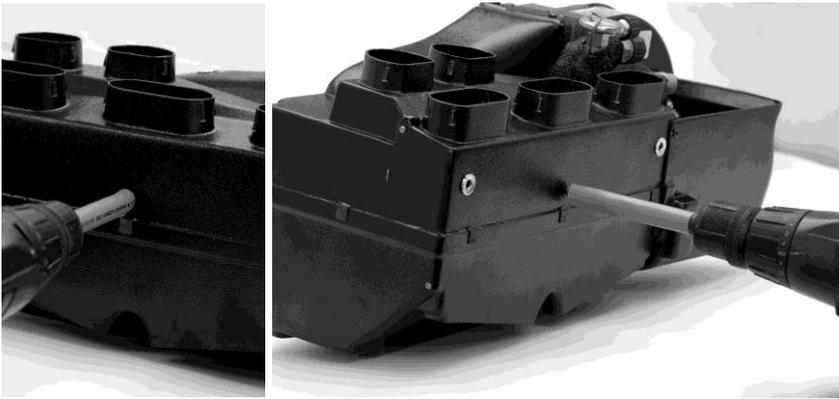
### **IMPORTANT NOTE!!!**

**When drilling into the GEN module to install sensors, care must be taken not to drill too deep! Drilling too deep may puncture the coils in the evaporator permanently damaging the GEN module!**

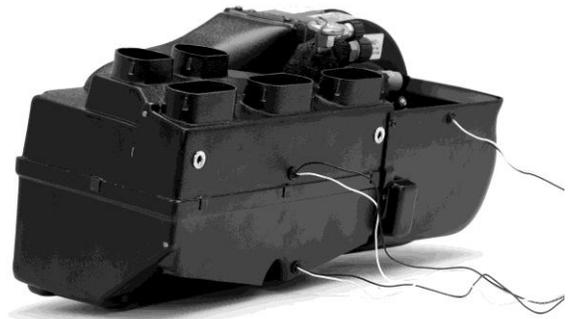
**To prevent drilling too deep, place a piece of 3/8" I.D. rubber hose over the drill bit leaving only about 1/4 inch of drill bit exposed (see Figure 2 at right).**



**Figure 2:** Example of drill stop using a piece of rubber hose to prevent drilling too deep.



**Figure 3:** Drilling the hole for the vent sensor in a GEN II Compac unit. Note the hose on the drill bit to prevent drilling too deep.

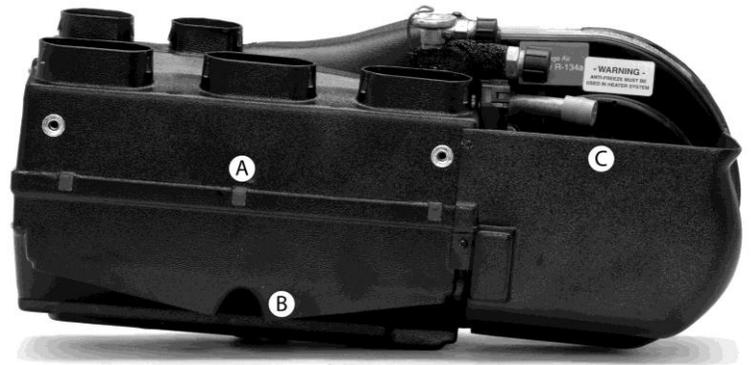


**Figure 4:** GEN II Compac unit with input, vent, and floor sensors installed.

**STEP 1**

**VENT SENSOR INSTALLATION:**

Using a 3/8" drill bit, with a hose installed (**see important note above**), drill a hole in the case in the side containing the vent and floor outlets (see figure 3) at location A (figures 5,6). This hole should be placed at about the center of the module, about 3/4" above the seam of the case (with vent openings as top). Push one of the temp sensors into this hole, leaving the wires to the outside. This sensor will be wired to the VENT+ and VENT- terminals on the control box as shown in the wiring diagram on the first page (figure 1).



**Figure 5:** COMPAC or SUPER temp sensor placement. A) vent sensor B) floor sensor C) cabin sensor

**STEP 2**

**FLOOR SENSOR INSTALLATION:**

Using a 3/8" drill bit, with hose installed (**see important note**), drill a hole in the GEN II case in the floor outlet ducting at point B (figures 5,6). Insert the second temperature sensor into the hole so that the wires are to the outside of the duct. This sensor will be wired to the FLOOR+ and FLOOR- terminals on the control box as shown in wiring diagram.



**Figure 6:** MINI temp sensor placement. A) vent sensor B) floor sensor

**STEP 3**

**CABIN SENSOR INSTALLATION:**

Using a 3/8" drill bit, with hose installed (**see important note**) drill a hole in the fan shroud at point C (figures 5,7). Insert the last sensor into the hole with the wires to the outside. This sensor will be wired to the CABIN- and CABIN+ terminal on the control box as shown in the wiring diagram.



**Figure 7:** MINI Cabin temp sensor placement. (point C)

**STEP 4**

**EVAPORATOR PROBE INSTALL:**

Push the evaporator probe into the hole in the GEN II module marked with the sticker for the capillary tube. The metal portion of the probe should go almost completely into the GEN II unit.

- STEP 5 GEN II INSTALLATION:** If the GEN II module is not yet installed in the vehicle, do so now. Refer to the GEN II manual for installation instructions.
- STEP 6 MODE WIRE CONNECTION:** Connect the four color coded wires to the control wires from the GEN II module. These are the wires that would typically go to the mode switch on the GEN II control panel. If the GEN II module is not equipped with defrost, leave the green wire unconnected. Plug the connector for the heat control into the 3 pin connector labeled “HEAT” on the DCC-2200 controller.
- STEP 7 TEMP SENSOR WIRING:** Connect the temp sensors to the controller as shown in the wiring diagram. The vent, floor and cabin sensors have two wires. The black wire is connected to the – terminal and the other wire is connected to the + terminal of each sensor inputs. Connect the RED wire of the evaporator probe to the EVP-(R) terminal and the YELLOW wire to the EVP+(Y) terminal. The evaporator probe must be connected directly to the control box. DO NOT EXTEND THE WIRES OF THE EVAPORATOR PROBE! This will cause it to read temperature incorrectly.
- STEP 8 REMAINING CONNECTIONS:** Connect remaining connections from terminal strip as shown in wiring diagram (see figure 1). NOTE: The ground connection from the fan control module should share a ground location with the fan. A/C clutch output should drive a relay which supplies power to the A/C clutch THROUGH the A/C safety switch.
- STEP 9 MOUNTING DISPLAY PANEL:** Using the provided template, or a template provided by Vintage Air, make the dash cutout for the display. Insert the display from front and clamp into dash from rear with provided clamps. Secure by tightening nuts onto clamp.
- STEP 10 CONNECT DISPLAY:** Connect display to control unit with supplied wiring harness. Fasten the shield wire eyelet from the display end of harness to the display case using one of the display mounting studs. Secure the eyelet with clamp nut (see figure 1).

## TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Display reads “Communication error”	Poor display harness connection	Check plug at display and controller for proper connection and check for break or pinch in wire.
	No battery connection	Ensure that there is 12V on the red wire of the fan control module. Also ensure that the pink wire of the fan control module is connected to the PWR terminal of the controller.
Display reads “Shorted cabin / vent / floor temp sensor”	Sensor is shorted	Check for pinched sensor wires
	Sensor not connected properly	Check that sensor is connected as shown in wiring diagram.
	Bad ground on sensor	Make sure all sensors ground to the ground terminal on controller NOT a chassis ground.
Display reads “open cabin / vent / floor temp sensor”	Sensor wire broken / shorted	Examine for pinched or broken wires to the sensor
	Sensor disconnected or not connected properly	Check that sensor is connected as shown in wiring diagram.
	Bad ground on sensor	Make sure all sensors ground to the ground terminal on controller NOT a chassis ground.
Display does not light up at key on	Bad connection on IGN terminal	Make sure that there is 12V at IGN terminal with key on.
	Poor harness connection to display	Check plug at display and controller for proper connection and check wires for pinches or breaks.
Fan will only run on high.	Broken medium fan wire connection	Check that medium fan wire is connected to FAN MED terminal on controller and check wire for pinches or breaks.
Fan will not run in high	Auto high set to off in setup	Enter setup and set Auto high to on.
	Poor connection to fan high circuit	Check connection from controller to fan module for breaks or pinched wire.
Fan does not run	Fan is set to off.	Press the fan up button to turn fan on.
	No ignition signal at fan module	Check for 12v on yellow wire of fan module with key on.
	Poor ground on fan motor	Check ground wire on fan motor for good ground.

System does not cool	A/C mode in ECON Evaporator froze up (indicated by low air movement from ducts)	Press A/C button until display reads "A/C" Place in ECON mode and raise temp setting to allow evaporator to thaw. Raising MIN AC TMP setting in setup should prevent future freezing of evaporator.
	Poor connection to A/C relay and clutch	Check for broken or pinched wire to A/C relay, safety switch and clutch.
	Evaporator probe sensor not properly connected, installed.	Check for broken or pinched wires to evaporator probe. Check probe for proper insertion into Gen II module.
	Poor connection on heat adjust plug.	Check for proper connection of heat adjust plug. Check for broken or pinched wires on plug.
	Temperature sensors not connected properly	Ensure temperature sensors are connected as described in wiring diagram.
System does not heat	Poor connection on heat adjust plug.	Check for proper connection of heat adjust plug. Check for broken or pinched wires on plug.
	Temperature sensors not connected properly	Ensure temperature sensors are connected as described in wiring diagram.
System does not blow out of vents / defrost / floor as expected	Poor connection on mode wires (color coded wires to Gen II module)	Check for good connection of blade terminals on wires. Check for pinched or broken wires.
	Defrost set to on for non-defrost system	Enter setup and set DEF option to DISABLED
	Evaporator core froze up	Place in ECON mode and raise temp setting to allow evaporator to thaw. Raising MIN AC TMP setting in setup should prevent future freezing of evaporator.
Cannot set system to defrost	Defrost set to disabled on system with defrost	Enter setup and set DEF to ENABLED

## **SERVICE AND REPAIR**

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical consultation is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems. **Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number.** Package the product in a good quality box along with plenty of packing material. Ship the product by UPS or insured Parcel Post. Be sure to include the RMA number on the package, and include a complete description of the problem with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day. Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase. Send no money. We will bill you after repair.

## **Dakota Digital 24 Month Warranty**

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship within 24 MONTHS FROM THE DATE OF PURCHASE, such defect(s) will be repaired or replaced at Dakota Digital's option.

This warranty does not cover nor extend to damage to the vehicle's systems, and does not cover removal or reinstallation of the product. This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.

This Warranty is in lieu of all other expressed warranties or liabilities. Any implied warranties, including any implied warranty of merchantability, shall be limited to the duration of this written warranty. Any action for breach of any warranty hereunder, including any implied warranty of merchantability, must be brought within a period of 24 months from date of original purchase. No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

**⚠ WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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