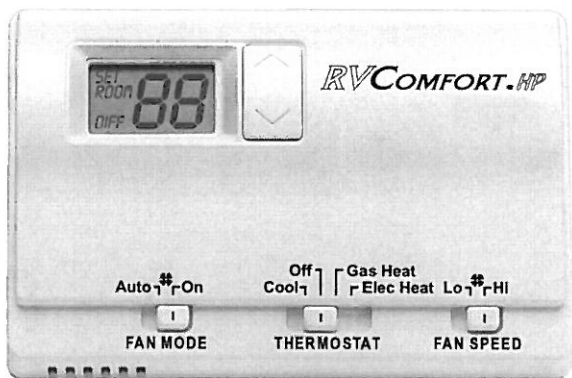


8530A3491



## INSTALLATION, OPERATION & APPLICATION GUIDE

for 8530A345\*, 8530-338\*, 8530-346\*, 8530-348\* and **8530-349\***

### 1 STAGE HEAT PUMP

\*Last digit represents specific model number



**Note:** Thermostat markings may vary with model.

## Caution

This thermostat should be installed by trained technicians only. Adhere to all local and national codes. Disconnect all power to the system before installing, removing, or cleaning.

## Operation

The display indicates room temperature and the word **ROOM** is shown on the LCD until the temperature selector is pressed; at which time the display temporarily indicates the setpoint temperature and the word **SET** is shown on the LCD. Each time the **UP** arrow is pressed, the setpoint will increase. Each time the **DOWN** arrow is pressed, the setpoint will decrease. Once the temperature selector button is no longer pressed for a few seconds, the room temperature will again be displayed, and the word **ROOM** will be displayed on the LCD.

In electric heat mode, if the heat pump is unable to satisfy the thermostat, the heat pump goes into lockout. See heat pump and backup heat example on Page 4 for conditions of heat pump lockout. **DIFF** will display on the thermostat LCD indicating backup heating is required to satisfy the thermostat.

In gas heat mode, the gas furnace will provide the only source of heat and the heat pump is locked out.

**Note:** The temperature is displayed in degrees Fahrenheit as a factory set default. To display in degrees Celsius, move the jumper marked "F" and "C" to bridge between middle pin and position "C", then cycle 12 volt power off then back on again (see Figure 2, Page 7).

Refer to operation chart (Page 3) for a more detailed listing of operation sequence.

Temperature		
Mode	Range	
	°F	°C
Cooling (set)	98°F to 33°F	37°C to -1°C
Heating (set)	98°F to 33°F	37°C to -1°C
Display (room)	99°F to 32°F	38°C to 0°C

## Operation Chart

The chart below shows the system functions with the 8530A345\*, 8530-338\*, 8530-346\*, 8530-348\* and 8530-349\* thermostats. After the entire air conditioning system (and furnace system) is installed, check each position function.

**Heat Pump Thermostat Operation Table**

	<b>Mode Switch</b>	<b>Fan Mode Switch</b>	<b>Fan Speed Switch</b>	<b>Calling</b>	<b>Operation of Unit</b>
1	Cool	Auto	Lo	No	No functions occur in this mode
2	Cool	Auto	Lo	Yes	GL-FAN Lo (Gray), Y-Compressor (Yellow) energized
3	Cool	On	Lo	No	GL-FAN Lo (Gray), energized
4	Cool	On	Lo	Yes	GL-FAN Lo (Gray), Y-Compressor (Yellow) energized
5	Cool	Auto	Hi	No	No functions occur in this mode
6	Cool	Auto	Hi	Yes	GH-FAN Hi (Green), Y-Compressor (Yellow) energized
7	Cool	On	Hi	No	GH-FAN Hi (Green), energized
8	Cool	On	Hi	Yes	GH-FAN Hi (Green), Y-Compressor (Yellow) energized
9	Off	Auto	Lo or Hi	No	No functions occur in this mode
10	Off	On	Lo	No	GH-FAN Lo (Gray), energized
11	Off	On	Hi	No	GH-FAN Hi (Green), energized
12	Gas Heat	Auto or On	Lo or Hi	No	No functions occur in this mode
13	Gas Heat	Auto or On	Lo or Hi	Yes	WF-Furnace (White) energized to run the furnace
14	Elec Heat	Auto or On	Lo or Hi	No	No functions occur in this mode
15	Elec Heat	Auto or On	Lo or Hi	Yes	WHP-Heat Pump (White/Black) will be energized to run the heat pump
16	Elec Heat	Auto or On	Lo or Hi	Back-up heat 5° below setpoint	WHP-Heat Pump (White/Black) will be energized to run the heat pump and WF-Furnace (White) will be energized to run the furnace.

**Note:** There is a 3 minute anti-short cycle delay timer built into the thermostat.

**NOTE 2**  
**Heat Pump and Backup Heat Example To Call for Gas Furnace**

Setpoint	Indoor Temp.	Operation
70	70+	No functions occur
	69	Heat Pump turns on (primary heat source)
	71	Heat Pump turns off (thermostat satisfied)
	69	Heat Pump turns on
	65	Gas Furnace turns on (heat pump not able to satisfy thermostat) (First strike for backup heat counter)
	71	Gas Furnace turns off heat pump turns off (thermostat satisfied)
	69	Heat Pump turns on
	65	Gas Furnace turns on (heat pump not able to satisfy thermostat) (Second strike for backup heat counter)
	71	Gas Furnace turns off, heat pump turns off (thermostat satisfied)
	69	Heat Pump turns on
	65	Gas Furnace turns on (heat pump is again unable to satisfy thermostat), (backup heat counter reaches 3rd strike and heat pump is locked out for 1 hour and 45 minutes)
		<b>Backup heat counter is reset if Heat Pump is running for more than 20 minutes and does not call for backup heat</b>
	71	Gas Furnace turns off (thermostat satisfied)
	69	Gas Furnace turns on (becomes primary heat source)
	71	Gas Furnace turns off (thermostat satisfied)
		<b>After 1 hour and 45 minutes lockout</b>
	69	Heat Pump turns on (resumes as primary heat source)
	65	Gas Furnace turns on, heat pump turns off (becomes primary heat source) (heat pump is locked out for another 1 hour and 45 minutes)
	71	Gas Furnace turns off (thermostat satisfied)
		<b>After 1 hour and 45 minutes lockout</b>
69	Heat Pump turns on (resumes as primary heat source)	
71	Heat Pump turns off (thermostat satisfied)	
	<b>Backup heat counter is reset any time Heat Pump satisfies thermostat setpoint and does not need gas furnace</b>	

**Note:** The word "DIFF" will display on LCD when backup heat is operating.

## Application

The 8530A345\*, 8530-338\*, 8530-346\*, 8530-348\* and 8530-349\* thermostat are intended for use with an RV Products rooftop heat pump. The OEM (Original Equipment Manufacturer) must supply the 12 VDC wiring and the furnace control wiring. RV Products suggests the thermostat wiring be a minimum of 18 gauge. The furnace control circuit must not exceed 1 amp. The thermostat is equipped with a replaceable fast-acting 2 amp fuse located on the base of the thermostat. The fuse is designed to "open" if the furnace is mis-wired or if there is a short in the system. Before replacing the fuse, the cause of the failure must be located and corrected.

## Installation

**WARNING:** Be sure all electrical power has been disconnected from the heat pump and the power supply. These instructions are provided for the proper mounting of the thermostat itself. An Operation Chart (see Page 3) is provided to show thermostat capabilities.

### A. THERMOSTAT LOCATION

This thermostat is a sensitive instrument. For accurate temperature control and comfort, the following considerations should be taken into account:

1. Locate the thermostat on an inside wall about five feet above the floor. Pick a dry area where air circulation is good.
2. Do not install the thermostat where there are unusual heating conditions such as direct sunlight, heat producing appliances (television, radio, wall lamp, etc.) or a furnace or air conditioner supply register.

### B. WIRING THE WALL THERMOSTAT

#### For the 8530-346\* Thermostat

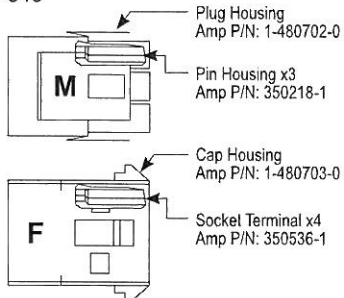
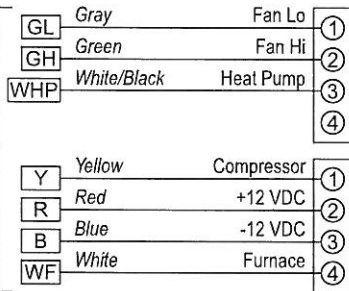
The OEM must supply the mating parts to connect these thermostats per Figure 1. The plugs must be connected to motorcoach wiring harness before the base is secured to the wall.

#### For the 8530A345\* Thermostat

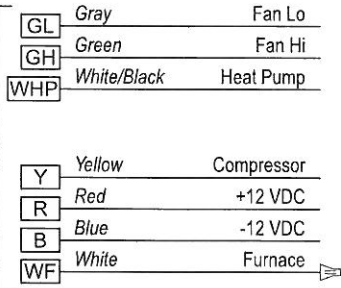
The OEM must supply the stripped wires to mate per Figure 1. The wires must be connected by wire nuts to motorcoach wiring harness before the base is secured to the wall.

# FIGURE 1

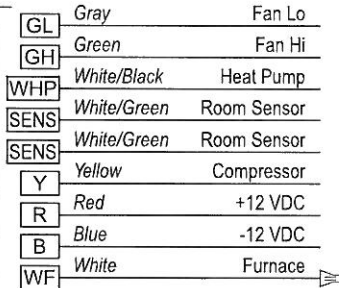
From Thermostat 8530-338\* and 8530-346\*



From Thermostat 8530-345\* and 8530-348\*



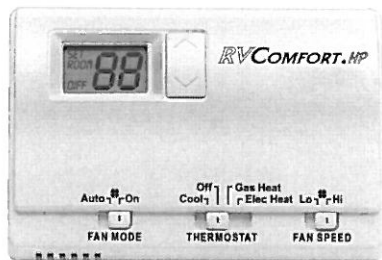
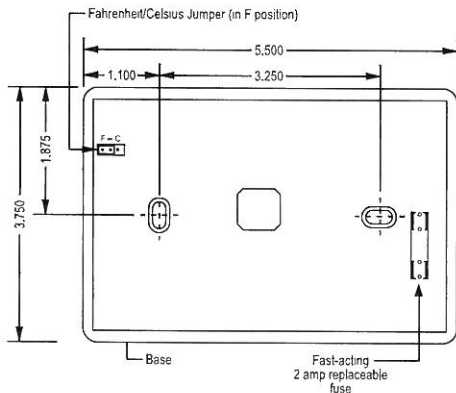
From Thermostat 8530-349\*



## C. ATTACHING THE WALL THERMOSTAT

1. Separate the thermostat cover from the base by gently pulling at the left and right. See Figure 2.
2. Connect plugs or wires to motorcoach wiring harness.
3. Attach the new thermostat base to the wall at the desired mounting location.
4. Reattach thermostat cover to base.

**FIGURE 2**



8530A345\* & 8530-346\* (not shown)  
Thermostat



**RV Products**

A Division of AIRXCEL, Inc.

**RV Products**  
**A Division of Airxcel, Inc.**  
**P.O. Box 4020**  
**Wichita, KS 67204**

**Web:** [www.rvcomfort.com](http://www.rvcomfort.com)