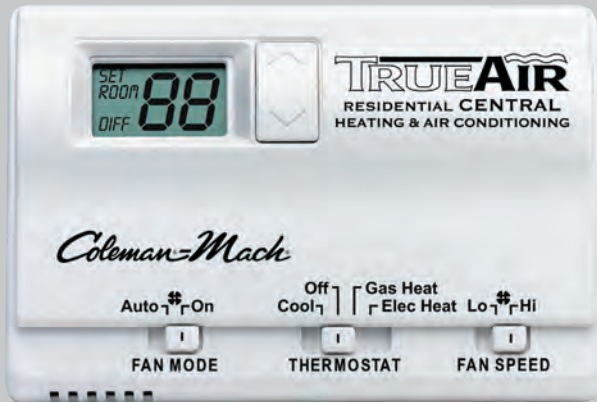


6535-344\*

## 2-Stage Heat Pump Wall Thermostat Installation and Operating Instructions



### Notes:

\*Last digit represents specific model number

Actual thermostat is black with white markings. Colors were reversed for use in these instructions.

## Operation

The display indicates room temperature and the word ROOM is shown on the LCD until the temperature selector is pressed; at that 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. DIFF will display on the thermostat LCD indicating second stage 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.

**Refer to truth table (below) for a more detailed listing of operation sequence.**

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

TEMPERATURE		
MODE	RANGE	
	°F	°C
Cooling (set)	98-33°F	37-1°C
Heating (set)	98-33°F	37-1°C
Display (room)	99-32°F	38-0°C

## Operation Chart

The chart below shows the system functions with the 6535-344\* thermostat. After the entire air conditioning system (and furnace system) is installed, check each position function.

**6535-344\* 2-Stage Heat Pump Thermostat Truth Table**

	Mode Switch	Fan Switch #1	Fan Switch #2	Calling	Operation
1	Cool	Auto	Lo	No	No functions occur in this mode
2	Cool	Auto	Lo	Stage 1 1° Above Set	ID fan low, compressor #1 and OD blower low cycle as needed
3	Cool	Auto	Lo	Stage 2 2° Above Set	ID fan low, compressor #1 and #2 and OD blower high cycle as needed
4	Cool	On	Lo	No	ID fan low continuous
5	Cool	On	Lo	Stage 1 1° Above Set	ID fan low continuous, compressor #1 and OD blower low cycle as needed

	Mode Switch	Fan Switch #1	Fan Switch #2	Calling	Operation
6	Cool	On	Lo	Stage 2 2° Above Set	ID fan low continuous, compressor #1 and #2 and OD blower high cycle as needed
7	Cool	Auto	Hi	No	No functions occur in this mode
8	Cool	Auto	Hi	Stage 1 1° Above Set	ID fan high, compressor #1 and OD blower low cycle as needed
9	Cool	Auto	Hi	Stage 2 2° Above Set	ID fan high, compressors #1 and #2 and OD blower high cycle as needed
10	Cool	On	Hi	No	ID fan high continuous
11	Cool	On	Hi	Stage 1 1° Above Set	ID fan high continuous, compressor #1 and OD blower low cycle as needed
12	Cool	On	Hi	Stage 2 2° Above Set	ID fan high continuous, compressors #1 and #2 and OD blower high cycle as needed
13	Off	Auto	Lo or Hi	N/A	No functions occur in this mode
14	Off	On	Lo	N/A	ID fan low continuous
15	Off	On	Hi	N/A	ID fan high continuous
16	Gas Heat	Auto or On	Lo or Hi	No	No functions occur in this mode
17	Gas Heat	Auto or On	Lo or Hi	Stage 1 1° below set	Low gas heat will be energized to run
18	Gas Heat	Auto or On	Lo or Hi	Stage 2 5° below set	Low gas heat and high gas heat will be energized to run*See note 2*
19	Elec Heat	Auto or On	Lo or Hi	No	Nothing is operating in this mode
20	Elec Heat	Auto or On	Lo or Hi	Stage 1 1° below set	Heat pump will run ID fan high, Compressor #1 and #2 with reversing valve #1 and #2 and the OD fan high
21	Elec Heat	Auto or On	Lo or Hi	Stage 2 5° below set	Heat pump will run ID fan high, Compressor #1 and #2 with reversing valve #1 and #2, OD fan high and low gas heat will be energized to run *See note 2 & 3*
22	Elec Heat	Auto or On	Lo or Hi	Stage 3 7° below set	Heat pump will run ID fan high, Compressor #1 and #2 with reversing valve #1 and #2, OD fan high and low and high gas heat will be energized to run *See note 2 & 3*

### Notes:

- 1) When 2nd stage cooling is activated, it stays on until setpoint is satisfied.
- 2) When 2nd or 3rd stage heating is activated, it stays on until setpoint is satisfied.  
When a heating stage is running for more than 20 minutes without reaching setpoint then the next available heating stage will be energized.
- 3) The word "DIFF" will display on the LCD when 2nd stage heat(Low gas furnace) is operating.

## Heat Pump Algorithm

To bring on Low gas furnace as 2nd stage heat and High gas furnace as 3rd stage heat

<u>Setpoint</u>	<u>Indoor Temp.</u>	<u>Operation</u>
70	70+	nothing is operating
↓ ↓ ↓	69	heat pump turns on (primary heat source)
	71	heat pump turns off (t'stat satisfied)
	69	heat pump turns on
	65	low gas furnace turns on (heat pump not able to satisfy thermostat) (first strike for 2nd stage electric heat counter)*See note*
	63	high gas furnace turns on *See note*
	71	heat pump and gas furnace turn off
	69	heat pump turns on
	65	low gas furnace turns on (second strike for 2nd stage electric heat counter)*See note*
	63	high gas furnace turns on*See note*
	71	heat pump and gas furnace turn off
	69	heat pump turns on
	65	low gas furnace turns on and heat pump turns off (2nd stage electric heat counter reaches 3rd strike and the heat pump is locked out for 2 hours)*See note*
	63	high gas furnace turns on*See note*
	71	gas furnace turns off (t'stat satisfied)
	69	low gas furnace turns on (becomes primary heat source)
	65	high gas furnace turns on as 2nd stage heat*See note*
	71	gas furnace turns off (t'stat satisfied)
↓ ↓ ↓		After 2 hour lockout
	69	heat pump turns on (resumes as primary heat source)
	65	Low gas furnace turns on and heat pump turns off (becomes primary heat source and the heat pump is locked out for another 2 hours)
↓ ↓ ↓		After 2 hour lockout
	69	heat pump turns on (resumes as primary heat source)
	71	heat pump turns off (t'stat satisfied) (2nd stage electric heat counter is reset anytime heat pump satisfies thermostat setpoint and does not need gas furnace)

### Note:

The word "DIFF" will display on LCD when 2nd stage heat is operating.

When 2nd or 3rd stage heat is activated, it stays on until setpoint is satisfied.

When a heating stage is running for more than 20 minutes without reaching setpoint then the next available heating stage will be energized.

## 2-Stage Gas Heat Algorithm

### High gas furnace as 2nd stage heat

<u>Setpoint</u>	<u>Indoor Temp.</u>	<u>Operation</u>
70	70+	nothing is operating
↓ ↓ ↓	69	low gas furnace turns on (primary heat source)
	71	low gas furnace turns off (t'stat satisfied)
	69	low gas furnace turns on
	65	high gas furnace turns on (low gas heat not able to satisfy thermostat) (first strike for 2nd stage gas heat counter)*See note*
	71	low and high gas furnace turn off
	69	low gas furnace turns on
	65	high gas furnace turns on (second strike for 2nd stage gas heat counter)*See note*
	71	low and high gas furnace turn off
	69	low gas furnace turns on
	65	high gas furnace turns on (2nd stage gas heat counter reaches 3rd strike and low gas furnace is locked out for 2 hours) *See note*
	71	low and high gas furnace turn off
	69	low and high gas furnace turns on (becomes primary heat source)
	71	low and high gas furnace turns off (t'stat satisfied)
↓ ↓ ↓		After 2 hour lockout
	69	low gas furnace turns on (resumes as primary heat source)
	65	high gas furnace turns on (becomes primary heat source and low gas furnace is locked out for another 2 hours)*See note*
↓ ↓ ↓		After 2 hour lockout
	69	low gas furnace turns on (resumes as primary heat source)
	71	low gas furnace turns off (t'stat satisfied)
		(2nd stage gas heat counter is reset anytime low gas furnace satisfies thermostat setpoint and does not need high gas furnace)

**Note:**

When 2nd stage heat is activated, it stays on until setpoint is satisfied.

When a heating stage is running for more than 20 minutes without reaching setpoint then the next available heating stage will be energized.

## Application

The 6535-344\* thermostat is intended for use with an RV Products 2 stage heat pump. The thermostat connects to the heat pump with a 9-pin plug through a lifeline. The OEM (Original Equipment Manufacturer) must supply the 12 VDC wiring and the furnace control wiring that connects to the 4-pin plug on the thermostat. The OEM supplies the mating receptacle for the 4-pin plug. 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 Instructions

**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 (Pages 2 and 3) is provided to show the thermostat capabilities.

## Thermostat Location

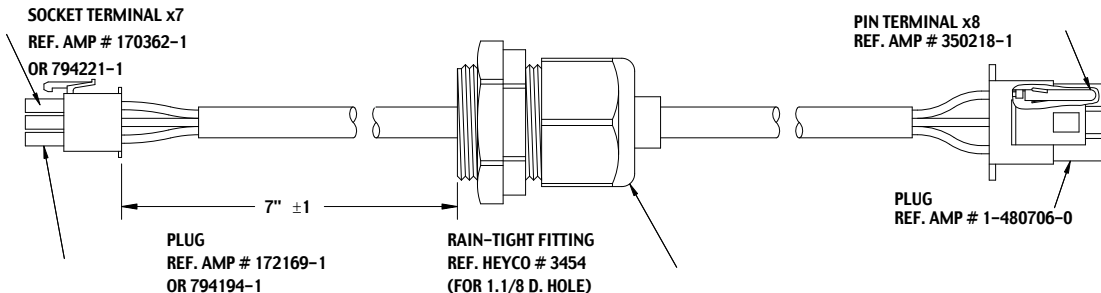
This thermostat is a sensitive instrument. For accurate temperature control and comfort, the following considerations should be taken into account:

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.

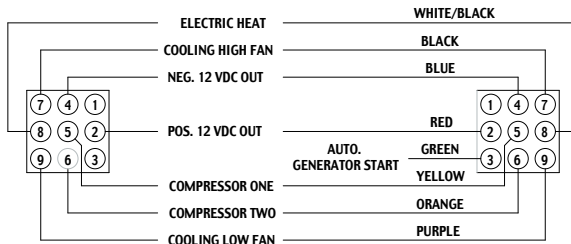
## Wiring the Wall Thermostat

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

**Figure 1**  
**6535-344\* Thermostat Assembly with Plugs**

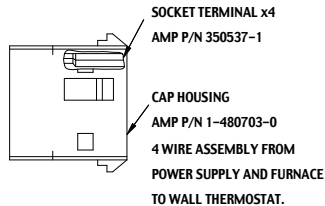
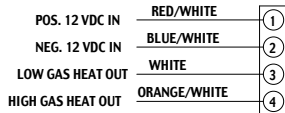


**Figure 1**  
**6535-344\* Thermostat Assembly with Plugs**  
 (continued from Page 6)



COLORS SHOWN MATCH  
 THOSE ON THERMOSTAT

LIFELINE FROM UNIT  
 TO WALL THERMOSTAT.



THESE TWO WIRE HARNESES MUST BE PROVIDED BY VEHICLE MANUFACTURER.



## Attaching the Wall Thermostat

1. Separate the thermostat body from the base by gently pulling at the top and bottom. See Figure 2.
2. Attach the new thermostat base to the wall at the desired mounting location.

**Figure 2**  
**Thermostat dimensions**

