



INSTALLATION, OPERATION & APPLICATION GUIDE for **9630-3301** DIAGNOSTIC A/C-HP ZONE CONTROL



FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no

guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WARNING!

This appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure they can use the appliance safely.

CAUTION!

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

APPLICATION

- Can control up to 4 ACs/HPs, 4 gas furnaces and 2 MAXXFans with one thermostat.
 - MAXXFans must be diagnostic models that are equipped with the correct control board
 - Rooftop units must be installed with the diagnostic control kit.
- Can operate as a single zone thermostat
- Constantly runs diagnostics and provides service codes when problems are detected
- Communication wire uses RJ45 connectors, OEM supplied.
- Bluetooth™ compatible.

INSTALLATION

OEM supplies the RJ45 cable that connects the thermostat, control boxes and MAXXFans.

MAXXFans require their own 12Vdc for 12Vdc fan functions. 12Vdc control voltage can be provided at either the control box or the thermostat and will be carried to the other components via the RJ45 cable.

The thermostat comes with a mounting plate.

Furnace wire is now at the control box.

Thermostat and Room Temperature Sensor Location

This system is designed to work one of two ways.

- A built-in sensor on the thermostat can control Zone 1. In this case, the thermostat must be installed in Zone 1.
- Alternatively, a remote temperature sensor can be connected to Zone 1. This situation would allow the thermostat to be located virtually anywhere in the coach, as long as the user can get to the thermostat to operate it. Every zone other than Zone 1 must always have a remote temperature sensor to control the system. The Remote Room Sensor available is 8330-3091 (white) and 8330-3101 (black).

This thermostat is a sensitive instrument. For accurate temperature control and comfort the following considerations should be considered when locating the remote sensors and the thermostat if the thermostat is to be used as the Zone 1 temperature sensor.

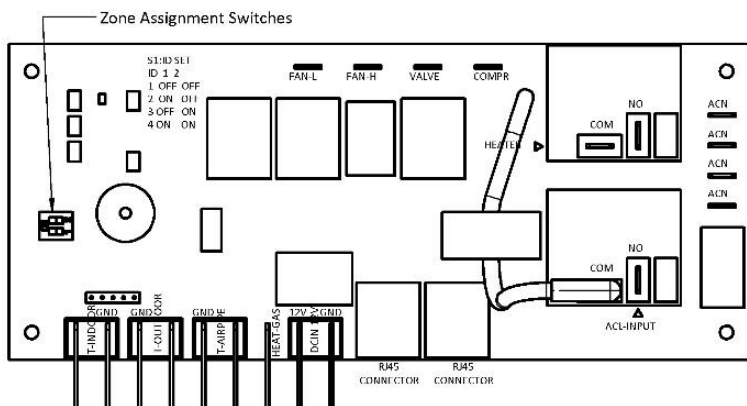
1. Locate on an inside wall about five feet above the floor. Pick a dry area where air circulation is good, but not in line with exterior doors.
2. Do not install where there are unusual heating conditions, such as direct sunlight, heat producing appliances (television, radio, wall lamps, etc.), or a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

Attaching the Wall Thermostat and Room Temperature Sensors

1. Attach the external room sensor to the wall using (2) #6 X 3/4 screws.
2. The external room sensor is wired to the two terminals marked "ROOM" on the control box low voltage strip.
3. Separate the thermostat cover from the base by gently pulling on the back cover.
4. Attach the new thermostat base to the wall at the desired mounting location using 2 #6 x 3/4 screws.
5. Connect the RJ45 cable to the thermostat.
6. If installing MAXXFans and running wiring to the thermostat, connect the 12Vdc to the "spring" connector block.
7. Re-attach the thermostat cover to the thermostat base.

Setting the Upper Control Board

DANGER: When adjusting the zone switches on the upper unit control board, be sure the line voltage (115 VAC) and the control voltage (12 VDC) are disconnected from the board. Failure to do this could result in injury or death.

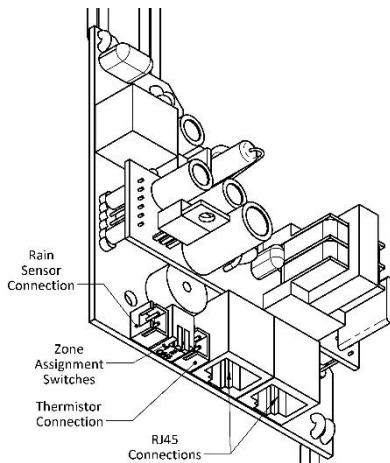


Each zone must be controlled by an upper unit control board. When installed, this board is located in the return air plenum of the rooftop unit. When installing the system, the upper unit control board must be set

according to which zone the board is to control. We recommend starting at the front of the coach as Zone 1 and progressing towards the rear.

- If the board is to control Zone 1, then the Zone Assignment Switches should be set to 1) OFF & 2) OFF.
- If the board is to control Zone 2, then the Zone Assignment Switches should be set to 1) ON & 2) OFF.
- If the board is to control Zone 3, then the Zone Assignment Switches should be set to 1) OFF & 2) ON.
- If the board is to control Zone 4, then the Zone Assignment Switches should be set to 1) ON & 2) ON.

Setting the MaxxFan PC Board



Each zone must be controlled by the MAXXFan PC Board. This board is located above the MAXXFan control plate. When installing the system, the MAXXFan PC Board must be set according to which zone the MAXXFan is to control.

- If the MAXXFan is located in Zone 1, then the Zone Assignment Switches should be set to 1) OFF & 2) OFF.
- If the MAXXFan is located in Zone 2, then the Zone Assignment Switches should be set to 1) ON & 2) OFF.
- If the MAXXFan is located in Zone 3, then the Zone Assignment Switches should be set to 1) OFF & 2) ON.
- If the MAXXFan is located in Zone 4, then the Zone Assignment Switches should be set to 1) ON & 2) ON.

OPERATION

The LCD display screen is the main interface between the user and the thermostat. This will display which zone the user is looking at. When the system is first powered up, the thermostat determines how many zones are connected to the system and only displays the zones detected.

The LCD also displays the mode that the particular zone is currently in. These will range from Cool Auto, Cool High, Cool Low, Fan High, Cool Low, Fan High, Fan Low and Off in cooling, and from Gas Heat, Heat Elec (heat pump or electric strip heat) and Off in heating.

Also, the LCD displays the room temperature and setpoint temperature in the displayed zone. If the word Set is displayed, then the setpoint or desired temperature is shown. If the word Set is not displayed, then the temperature displayed is the actual room temperature in the displayed zone.

Note: The thermostat is designed to display temperatures from 33 to 124 (or 41 to 103 with remote sensor) however it will operate from -40 to +175. If the temperature is between -40 and -41, then 41 will be displayed as the room temperature. Also, if the room temperature is between 124 to 175, then 124 will be displayed. When temperature extremes fall outside the operating limits of the thermostat, "Er" will display in the temperature of the LCD to show that the current ambient temperature has exceeded the thermostat capabilities. Additionally, if there is a problem with one of the remote temperature sensors, "Er" will display on the thermostat.

Note: If the system is in cooling and is programmed to have only a heating appliance connected in a zone, then the thermostat will still display the room temperature in that zone, but the user will not be able to operate any cooling appliance in that zone since there is not one connected in that zone. Your



homeowner packet should contain literature that will list what heating and cooling appliances are installed in each zone of your motor home.

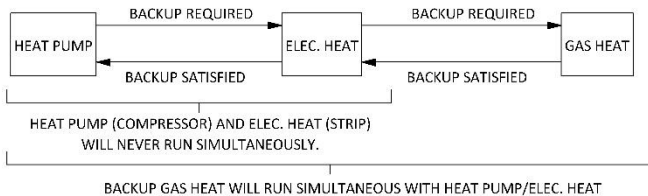
Error Codes:

No.	Item	Condition	Deal with	Displayed Error Code
1	Room temperature sensor is bad.	Detecting the temperature is lower than -30 °C or larger than 80 °C for 1 mins.	Compressor & Furnace will not run	Service Required. Code: A1
2	Indoor coil temperature sensor is bad	Detecting the temperature is lower than -30 °C or larger than 80 °C for 1 mins.		Service Required. Code: A2
3	Lack of refrigeration	In cool mode after the compressor is running more than 10 mins, the indoor coil temperature is more than 20 °C for 1 min.		Service Required. Code: A3
4	Lack of heat pump	In heat mode after the compressor is running more than 10 mins, the indoor coil temperature is less than 10°C for 1 min.		Service Required. Code: A4
5	Compressor is bad.	After compressor running 1mins, the current of compressor is zero. And the different between indoor coil temp. and room temp. is less than 3°C.		Service Required. Code: A5
6	Fan is bad	After fan running 1mins, the current of fan is zero.		Service Required. Code: A6

Function	Mode	Zone	Demand	HP Mode	Operation of Unit
Off	N/A	1 - 4	N/A	N/A	No units operating in this mode: LCD is displaying temperature in Zone displayed. User can toggle thru zones to see temperature in each zone (Setpoint cannot be adjusted)
Cool	Cool Auto	1 - 4	No	N/A	Nothing is operating since there is no cooling demand: LCD is displaying temperature in Zone1
Cool	Cool Auto	1 - 4	Yes	N/A	Compressor is energized; if 1° C above setpoint then FAN LOW is energized If 2° C+ above setpoint, then FAN HIGH is energized & locks in HIGH
Cool	Cool High	1 - 4	No	N/A	FAN HIGH is energized
Cool	Cool High	1 - 4	Yes	N/A	Compressor is energized; FAN HIGH is energized
Cool	Cool Low	1 - 4	No	N/A	FAN LOW is energized
Cool	Cool Low	1 - 4	Yes	N/A	Compressor is energized; FAN LOW is energized
Cool	Fan High	1 - 4	N/A	N/A	FAN HIGH is energized (Setpoint cannot be adjusted)
Cool	Fan Lower	1 - 4	N/A	N/A	FAN LOW is energized (Setpoint cannot be adjusted)
Cool	Off	1 - 4	N/A	N/A	Nothing operational in Zone (Setpoint cannot be adjusted)
Heat	Elec	1 - 4	No	Non HP	Nothing is operating in this mode since there is no heating demand
Heat	Elec	1 - 4	Yes	Non HP	Strip heat is energized; Set FAN SPEED is energized
Heat	Elec	1 - 4	No	HP	Nothing is operating in this mode since there is no heating demand
Heat	Elec	1 - 4	Yes	HP	Compressor & Reversing Valve are energized; If Indoor Coil <25° C, Fan is Off; If 25-30°C, FAN LOW; If >30°C, Set Fan Speed is energized
Heat	Gas	1 - 4	No	N/A	Nothing is operating in this mode since there is no heating demand
Heat	Gas	1 - 4	Yes	N/A	Gas Heat is energized
Heat	Off	1 - 4	N/A	N/A	Nothing operational in Zone (Setpoint cannot be adjusted)

Note: Temperature Setpoints will be stored in memory for each zone in both heating & cooling modes.

ALGORITHM TO CALL FOR BACKUP MODE OF HEAT



BACKUP REQUIRED = HEAT MODE HAS RUN CONTINUOUSLY FOR 30 MINUTES.
NEXT BACKUP HEAT MODE IS ENGAGED.

BACKUP SATISFIED = AFTER FOR 30 MINUTES IN BACKUP MODE, THERMOSTAT SET TEMPERATURE IS SATISFIED.
CURRENT BACKUP HEAT MODE DIS-ENGAGES, PREVIOUS MODE ENGAGES.

IC WARNING

This device contains licence-exempt transmitter(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.