RV Products
A Division of AIRXCEL, Inc.

OPERATING INSTRUCTIONS
FOR
INFRARED REMOTE CONTROL SYSTEM

DESIGNED BY THE MAKERS OF
THE MACHÒ AIR CONDITIONERS

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WARNINGS

IMPORTANT NOTICE

This system must be installed or serviced by qualified individuals specially trained and experienced in installation and service of this type of equipment and related system components. Adhere to all local and national codes.

Installation and service personnel are required by some states to be licensed. **PERSONS NOT QUALIFIED SHALL NOT SERVICE THIS EQUIPMENT.**

WARNING

Improper installation may damage equipment, can create a hazard and will void the warranty.

The use of components not tested in combination with these units will void the warranty, may make the equipment in violation of state codes, may create a hazard, and may damage the equipment.

WARNING – SHOCK HAZARD

To prevent the possibility of severe personal injury or equipment damage due to electrical shock, always be sure the electrical power to the appliance is disconnected during installation and service.

GENERAL INFORMATION

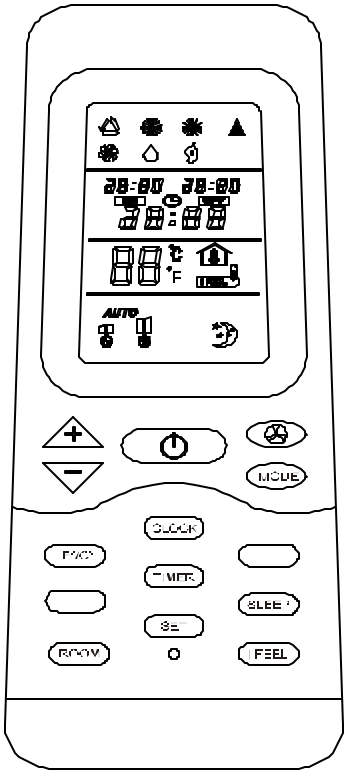
Description of Product:

The infrared remote control unit by RVP is a control system that can be added to any ceiling plenum kit offered by RVP for your RV roof top air conditioner or heat pump. The remote system will give you control of both the cooling and heating appliances from the comfort of your favorite chair. This remote control system has new features like ON/OFF timer, auto change over (optional with gas heat appliance) and dry mode (for humidity control).

Application:

Recreational Vehicle Air Conditioning & Heating units

HANDHELD REMOTE



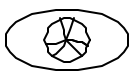
Note:

1. All communications between the remote and receiver are validated only when you hear a beep coming from the receiver.
2. The operation of the unit is updated when the unit is “on” and you hear a beep coming from the receiver.
3. There are built-in time delays that may affect the mode of operation.

Buttons

POWER

The orange button is used for turning the unit "on" and "off"



FAN

Fan speed button is used for selecting fan auto/on & high/low

TEMP UP/DOWN

Up/down arrows are used for adjusting temperature, timer and clock.

MODE

“MODE” button scrolls through all the programmed system operating functions

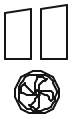
A. COOLING OPERATION

Cool symbol

1. Using the handheld remote, select the cool symbol by pressing the “MODE” button until the cool symbol is displayed.

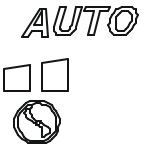
2. Select a fan speed that best satisfies your need by pressing the fan button located above the “MODE” button:

   a. High speed
   - Continuous high fan speed operation
   - Selected when maximum cooling is required.

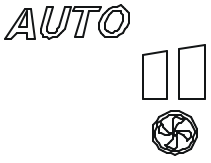


   b. Low speed
   - Continuous low fan speed operation
   - Selected when room reaches desired comfort level and needs to be maintained. Normally this low speed is used for nighttime operation.

   c. Auto low speed
   -Low fan cycles with the compressor



   d. Auto high speed
   -Fan cycles with the compressor
   -Auto high will control fan speed depending on the cooling requirement



3. Set temperature to the desired level by pushing the up (+) or down (-) button.

B. GAS HEAT OPERATION

(If gas heat appliance is connected to upper unit)

Gas Heat symbol

1. Select gas heat by pressing the "MODE" button until the gas heat symbol is displayed.
2. Set temperature to the desired level by pushing the up(+) or down(-) button.

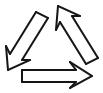
C. DRY-AIR OPERATION

Dry-air symbol

1. Select the dry-air mode by pressing the "MODE" button until the dry-air symbol is displayed.
2. Set temperature to the desired level by pushing the up(+) or down(-) button.
3. In the dry-air mode, the compressor & fan will cycle on and off at different timing intervals depending on the setpoint. If the temperature is above the setpoint, the on cycle is longer than the off cycle to help maintain setpoint. If the temperature is below the setpoint, the off cycle is longer than the on cycle to help maintain setpoint.

D. AUTO CHANGE OVER OPERATION

Auto change symbol

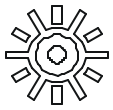


1. Select the auto change over mode by pressing the "MODE" button until the auto change symbol is displayed.
2. Set temperature to the desired level by pushing the up(+) or down(-) button.

(**Note:** In the auto change over mode the unit will maintain a comfortable temperature throughout the room without the trouble of having to select heat or cool mode. A gas heat appliance and air conditioner must be present and operational before this feature can operate.)

E. ELECTRIC HEAT OPERATION (if equipped with heat strip or heat pump)

Electric Heat symbol



1. Select electric heat by pressing the "MODE" button until the heat symbol is displayed.
2. Set temperature to the desired level by pushing the up (+) or down (-) button.
3. In electric heat mode, if the electric heat appliance is unable to satisfy the setpoint, the gas heat output is energized with the AUX HEAT red LED on at 5°F below setpoint. Both gas heat and electric heat appliances will run simultaneously until the setpoint is satisfied for auxiliary heat.

F. SLEEP OPERATION

Sleep symbol

1. In order for the sleep mode to function properly, you must select either a heat or cool mode of operation.
2. With the room set to a desired temperature, select the sleep mode by pointing to the receiver and pressing the "SLEEP" button, the sleep symbol will display and a beep will sound indicating that the unit is in sleep mode. (**Note:** In sleep mode the temperature will be offset by 2°F of set point after a 2 hour delay, which means, if the set point was 75°F at ten o'clock (for cooling operation) then in sleep mode it will automatically change to 77°F at twelve o'clock.)

G. FAN ONLY OPERATION

Fan symbol

1. Fan only operation is selected by pressing the "MODE" button until the fan symbol is displayed.
2. Fan high or low speeds are then selected by pressing the fan button located above the "MODE" button. Fan will run continually at the selected speed; it is not controlled by the set point.

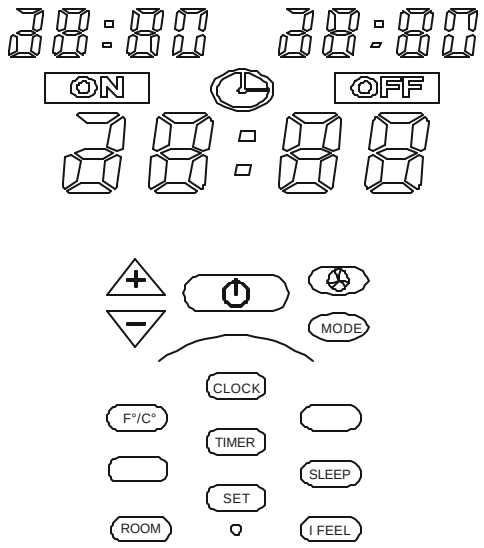
H. "I FEEL" OPERATION

"I FEEL" symbol

1. For this mode to operate, the system would have to be selected for electric heat, cool, gas heat or auto change over.
2. Select the "I FEEL" mode by pressing "I FEEL" button, the "I FEEL" symbol will display, a beep will indicate that the unit is in "I FEEL" mode.
3. In "I FEEL" mode the handheld remote then becomes the temperature sensor and therefore must be positioned in line of sight to send updated signals to the receiver regularly.
4. The temperature can then be adjusted to the desired set point from the remote for that specific location.
   (**Note:** If the remote is placed in a location where the receiver cannot receive a signal for more than sixteen minutes, the system will ignore the handheld remote and revert back to the receiver as the temperature control device. The remote should not be positioned in an area that is in direct exposure to sunlight or any other form of heat source).
5. Battery life will be significantly reduced if unit is left in "I FEEL" mode for an extended amount of time.

I. TIMER OPERATION

Note: Everytime the “CLOCK” or “TIMER” button is pressed, the relevant display will blink for 15 seconds giving the operator enough time to start setting. If no button is pushed in 15 seconds, the timer display will disappear.



1. Setting the clock
    a) When new batteries are installed, the clock will display 0:00
    b) This clock displays military/aviation time (24 hour format) only. See page 12 for a table to convert 24 hour to 12 hour format.
    c) Press the “CLOCK” button, the clock "display" should blink, press the up or down button to set the clock e.g. 1:00PM is 13:00
    d) Press the “SET” button.

2. Setting the timer to "ON"
    a) Press the "TIMER" button, the timer "on" clock will turn on indicated by a blinking "on" symbol
    b) Set the timer by pressing the up or down button, when finished, point to the receiver, press the “SET” button and listen for a beep to validate the timer.
    c) When the timer "on" mode is activated and the timer & clock are synchronized, the unit will turn "on" at the current selection as displayed on the remote at the selected time.

3. Setting the timer to "OFF"
    a) Press the "TIMER" button twice, the timer "off" clock will turn on indicated by a blinking "off" symbol
    b) Set the timer by pressing the up or down button, when finished, point to the receiver, press the “SET” button and listen for a beep to validate the timer.
    c) When the timer "off" mode is activated and the timer & clock are synchronized, the unit will turn off at the selected time.

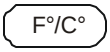
4. Setting the timer to "ON" & "OFF"
    a) This mode allows the operator to set the system to run for a certain period of time.
    b) Press the "TIMER" button three times, the timer "on" clock will blink while the timer "off" clock is displayed solid on.
    c) Set the timer “on” by pressing the up or down button, when finished, press the timer button again to set timer "off".
    d) When timers are set, point to the receiver, press the “SET” button and listen for a beep to validate the timer "on" and timer "off" settings.
    e) When the timer mode is activated and the timer & clock are synchronized, the unit will turn on and off at the selected times.

J. ROOM TEMPERATURE DISPLAY

Room Symbol

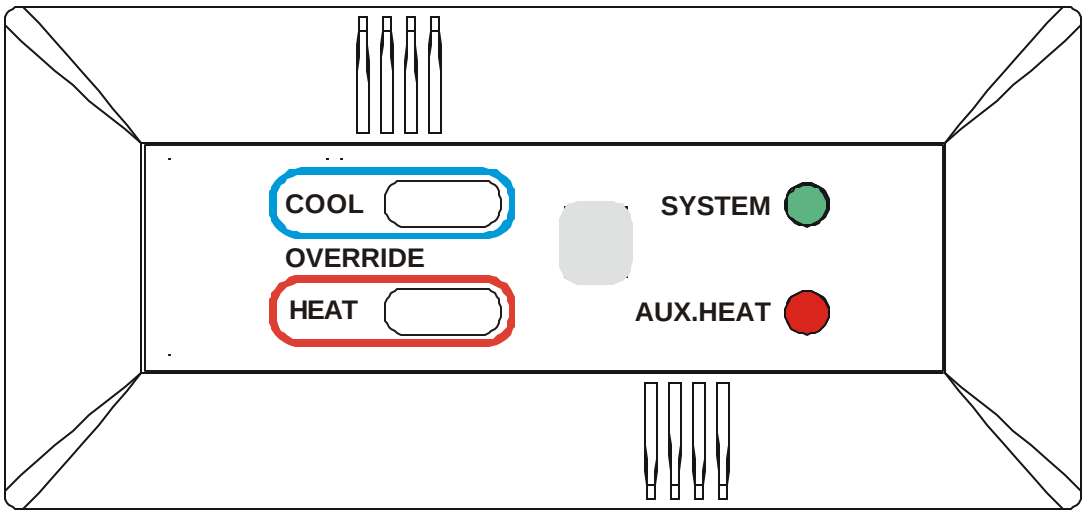
Press the "ROOM" button to display room temperature at the remote.

K. F°/C° DISPLAY



Press the “F°/C°” button to display temperature in either degrees Fahrenheit or Celsius.

RECEIVER UNIT



1. Cool override operation

    a) By pressing the “COOL” button on the receiver, the system automatically defaults to the "cool" setting of 78°F and the SYSTEM green LED will flash.
    b) This mode of operation is useful in the event the remote battery goes low or the remote is misplaced.
    c) Pressing the “COOL” button a second time will turn the unit off and the SYSTEM green LED will turn off.

2. Heat override operation
   (**Note:** With gas heat appliance connected to the upper unit)

   a) By pressing the “HEAT” button on the receiver, the system automatically defaults to the "heat" setting of 68°F and the AUX. HEAT red LED will flash.
   b) This mode of operation is useful in the event the remote battery goes low or the remote is misplaced.
   c) Pressing the “HEAT” button a second time will turn the unit off and the AUX. HEAT red LED will turn off.

3. System LED (green)

   a) The LED is off when the power is off, the 12VDC is removed, the communication cable is not connected, or the unit is in heat override.
   b) The LED is on when the power is on.
   c) The LED is flashing slow and steady when the unit is in cooling override.

4. Auxiliary heat LED (red)

   a) The LED is on when the auxiliary heat is on.
   b) The LED is flashing slow and steady when the unit is in heating override.

5. Buzzer

   a) The buzzer will beep one time when the receiver board has received a valid command from the remote transmitter.
   b) The buzzer will double beep when the receiver board has received an invalid command from the remote transmitter.

TROUBLE SHOOTING GUIDE

TROUBLESHOOTING

Symptom	Remedy
Remote does not turn on system	Check and replace remote batteries if the display fades while any button is activated or no display is present. Point remote towards IR receiver during transmission.
system does not turn on, no green LED & no beep	Check wiring. (see "installation instruction") Check modular cable to receiver. Check diagnostic LED status in the upper unit control box.
system does not turn on even when receiver green LED is on.	Low or over voltage condition, check diagnostic LED status in the upper unit control box.
Fan runs but no cold air.	Evaporator temperature sensor reaches low limit, defrost mode. Check diagnostic LED status in the upper unit control box.
System runs continuously in the cool mode	Remote was set for "I feel" mode and is left in a heated environment (sun etc.)
System runs continuously in the heat mode	Remote was set for "I feel" mode and is left in a cool environment

1. Diagnostic LED (green)
   (**Note:** Located on the control board in the upper unit control box.)

   a) The LED is on when the 12VDC is adequate and communications are present.
   b) The LED is flashing fast and steady when in the freeze mode.
   c) The LED is flashing slow and steady when the delay on break timer is activated.
   d) The LED is flashing 1 cycle on and off for one second with high or low 12VDC.
   e) The LED is flashing 2 cycles on and off for one second with a communication problem.

2. Table to convert the 24 hour clock format (military/aviation time) to the 12 hour clock format.

24 HOUR	**12 HOUR**	**24 HOUR**	**12 HOUR**
0:00	12:00 AM	12:00	12:00 PM
1:00	1:00 AM	13:00	1:00 PM
2:00	2:00 AM	14:00	2:00 PM
3:00	3:00 AM	15:00	3:00 PM
4:00	4:00 AM	16:00	4:00 PM
5:00	5:00 AM	17:00	5:00 PM
6:00	6:00 AM	18:00	6:00 PM
7:00	7:00 AM	19:00	7:00 PM
8:00	8:00 AM	20:00	8:00 PM
9:00	9:00 AM	21:00	9:00 PM
10:00	10:00 AM	22:00	10:00 PM
11:00	11:00 AM	23:00	11:00 PM

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