

INSTRUCTION TO THE USER (FCC)

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.

Operation with non-approved equipment is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Orka Technology Corporation
6170 W. Lake Mead Blvd. # 111
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Phone (702) 985-5502
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www.orkatechnology.com

ORKA

TECHNOLOGY CORP.

"Taking a bite out of energy costs"



Instruction Manual for the **ORKA** Remote Thermostat/Humidity Controller

Model # RFTH-100

Thank you for your purchase of Orka Technology's RFTH-100 remote thermostat. We are confident you will find your evaporative cooler much more effective now that you can control it. Simply place the thermostat anywhere in your home, plug it in, plug the cooler into the receiver / power unit, and it will keep the temperature where you set it at that location, while monitoring for excess humidity.

FOR 115 VOLT PLUG-IN COOLERS ONLY

Model RFTH-100

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IMPORTANT NOTICE

If you and a neighbor both have Orka Technology controllers you may have a conflict where one of them is controlling both units. This will greatly depend on the distance between your controller and your neighbor's. If you find yourself in this situation please refer to the CAUTIONS section on page 11. It is a simple matter of changing the address on the thermostat and the receiver / power module.

Additional Limitations: Any implied warranty granted under state law, including warranties of merchantability or fitness for a particular purpose, are limited to one year from the date of purchase. Orka Technology Corp. is not responsible for direct, indirect, incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and / or do not allow the exclusion or limitation of incidental damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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Installation Requirements

For most installations it is a simple situation. Just plug in the receiver, plug in the evaporative cooler, set the controls on the evaporative cooler to low or high fan, pump on and any other things you would do with the cooler without the Orka controller. You will be able to change any parameters you set on the cooler if operating the cooler with the cooler manufacture's criteria. Plug in the remote thermostat/humidity controller and set the programming as directed.

For other types of installation a qualified electrician will be necessary to insure a quality code approved installation. If you have any questions regarding installing the Orka temperature / humidity controller please contact one of our technical representatives at 702-985-5502 or on the internet at www.orkatechnology.com.

WARRANTY

Orka Technology Corp. Limited One Year Warranty and 30 Day Refund Policy

30 Day Refund Policy: During the first 30 days after date of purchase, you may return the Orka Temperature / Humidity controller for any reason for a full refund of the purchase price. You must present proof of purchase and return the unit in the original packaging to: Orka Technology Corp., 6170 W. Lake Mead Blvd. #111, Las Vegas, NV 89108. You will be refunded the purchase price (not including the cost of return postage) within 90 days upon receipt.

1 Year Limited Warranty: The warranty covers all defects in workmanship or materials in your Orka Temperature / Humidity Controller for a period of one year from the date of purchase.

How to get Service: Just return the controller system, properly packaged and postage prepaid to Orka Technology Corp. at the address above along with proof of purchase which includes date of purchase. We will repair any faulty workmanship, and either repair or replace any defective part, at our option. We will do so without any charge to you. We will complete the work in a reasonable time, but, in any case, within 90 days or less. We then will return the repaired or new item shipped prepaid to you.

What's Not Covered: This warranty applies only to the original purchaser at retail and may not be transferred. This warranty only covers defects arising under normal usage and does not cover any malfunction, failure or defects resulting from misuse, abuse, neglect, alteration, modification or repairs by other than Orka Technology Corp. Orka Technology Corp. makes no warranties, representations or promises as to the quality or performance of the controller other than those specifically stated in the warranty.

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1-DESCRIPTION

Our system consists of three components. The first component, the thermostat itself, is a stand alone unit. The second component is a small, regulated power supply that plugs into a 115 volt wall outlet. The cord from the power supply plugs into the back of the thermostat. THERE ARE NO BATTERIES TO REPLACE, EVER. The third component is a receiver / power control unit. It plugs into a 115 volt wall outlet near your evaporative cooler. Then the evaporative cooler plugs into the receiver / power unit. That's all there is to it!

The thermostat is designed to monitor indoor temperature and relative humidity. You can adjust the temperature "turn on" point to your comfort level. Once it turns on, it will lower the temperature by approximately 3 degrees below the set temperature before turning off. You can also set a "turn off" point based on the humidity level inside your home. Evaporative coolers are most effective when the humidity level is very low. As the humidity level goes up, the cooling efficiency of the cooler drops off. At approximately 60% humidity they are totally ineffective. We suggest a starting level of 40 to 45%. At that setting, if a rain shower comes through while you are not home, the thermostat will turn off the evaporative cooler and allow the air conditioning to take over.

When the thermostat is powered up with the regulated power supply, it starts sending an RF (radio frequency) signal to the receiver / power control unit approximately every 30 seconds. This signal can go through walls, floors, etc. The thermostat and receiver / power unit can be in different rooms or on different levels in your home. The thermostat does not send a continuous signal, but rather a short burst twice a minute. Therefore, if you change any settings on the thermostat, they will not take effect until the next burst, which can be as long as 30 seconds after you make the changes.

2-ASSEMBLY

STEP 1

RECEIVER Remove the screw holding on the wall plate where you intend to plug in your evaporative cooler. Plug the receiver in the bottom outlet, and replace the screw through the tab on the top of the receiver. If the screw is not long enough to reach the threads in the outlet, we have provided a longer one. It is packaged with the thermostat. Adjust the antenna to an upright position. See picture below...



STEP 2

POWER SUPPLY Unwrap the power cord, and plug the unit into an 115 volt AC receptacle near where you want to monitor the temperature and humidity. Make sure it is not a “switched” outlet designed for a lamp.

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7-TROUBLESHOOTING

- Nothing showing in display
- No power to thermostat, make sure power supply is plugged into wall and into back of thermostat. Also make sure wall socket is not “switched” for a lamp
- Display shows only “OFF”
- Press power switch on thermostat
- Evaporative cooler does not turn on
- Make sure temperature is set lower than room temperature, and that humidity setting is higher than relative humidity in the room
- Evaporative cooler does not turn off
- Set temperature setting higher
- I can not control my evaporative cooler at all
- You may have exceeded the range of the thermostat’s transmitter. Try moving the thermostat closer to the receiver / power module. Also try adjusting the antenna on the receiver / power module.
- I need help, who can I call?
- Orka Technology Corp.
702-985-5502
Monday—Friday
9:00 AM—5:00 PM
Pacific time
Or go to...
www.orkatechnology.com

6-FREQUENTLY ASKED QUESTIONS

CAN THIS UNIT CONTROL A HEATER?

No, this unit is designed for cooling and humidity control only, but it can be used to control a humidity source, such as in a greenhouse.

CAN THIS UNIT CONTROL AN AIR CONDITIONER?

Yes, you can control a window type A/C unit if you do not exceed the current rating of the power module (1,800 watts or 15 amps @ 115 VAC)

HOW MUCH CAN I EXPECT TO SAVE?

That depends on how much you use your evaporative cooler rather than your air conditioner. Research has shown by using an evaporative cooler as the major source of cooling can save between 40% and 70% or more of the energy costs of cooling your home, depending upon the installation. The use of the Orka controller can add 5-15% more in savings.

WILL THE EVAPORATIVE COOLER AND A/C EVER RUN AT THE SAME TIME?

Yes. This is a feature that may better protect your home and pets if you are not around to monitor the cooling. If the outside temperature gets so high the evaporative cooler cannot maintain a temperature as set by the thermostat the A/C will switch on until the higher set temperature of the A/C is met. Once the temperature drops to the level set by the controller the A/C will shut off and the evaporative cooler will take control.

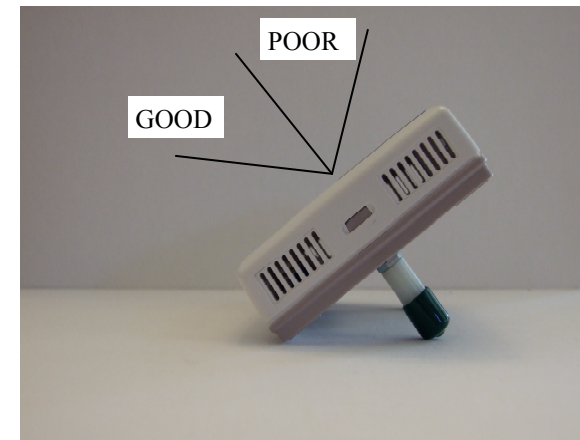
SINCE VENTING IS REQUIRED FOR EVAPORATIVE COOLERS, WILL I WASTE ENERGY IF THE A/C IS RUNNING AT THE SAME TIME?

You may lose some efficiency during that period. However, if the A/C is pre set at a level higher than the ORKA Controller the period of time both are on should be very minimal. You can also install a pressure vent system for the evaporative cooler which will minimize the loss of efficiency.

STEP 3

THERMOSTAT Inside you will find the thermostat itself and a package with two standoff type legs and an extra length screw for mounting the receiver / power unit (see above STEP 1). Screw the legs onto the studs sticking out the back of the thermostat. For a starting point, we suggest screwing the legs all the way down till they touch the retaining nuts. This will give you the proper viewing angle while standing when using the back light if the thermostat is on a relatively low coffee table or nightstand. If the thermostat is going to be used on an object that is higher, like a desk or dresser, you may wish to screw the legs out $\frac{1}{4}$ to $\frac{1}{2}$ inch. The legs can be screwed in or out as desired to give the best results. Keep in mind the viewing angle shown below.

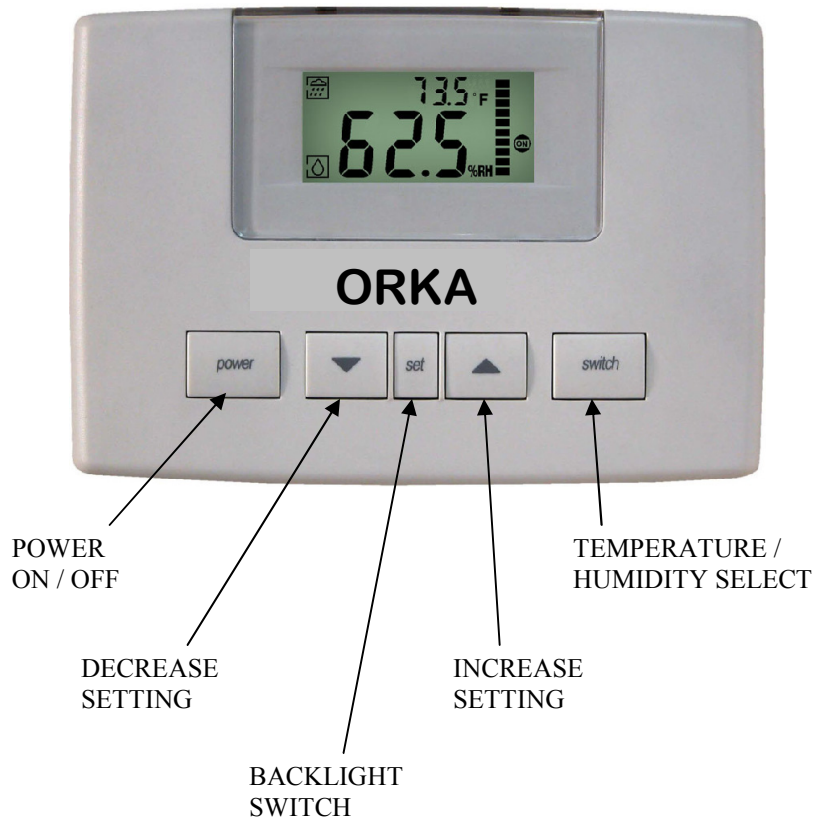
For best viewing while using the backlight feature, the thermostat should be tilted back enough that you are looking at it at a 90 degree angle, or lower.



Finally, plug the power supply connector into the jack on the back of the thermostat. The installation is now complete.

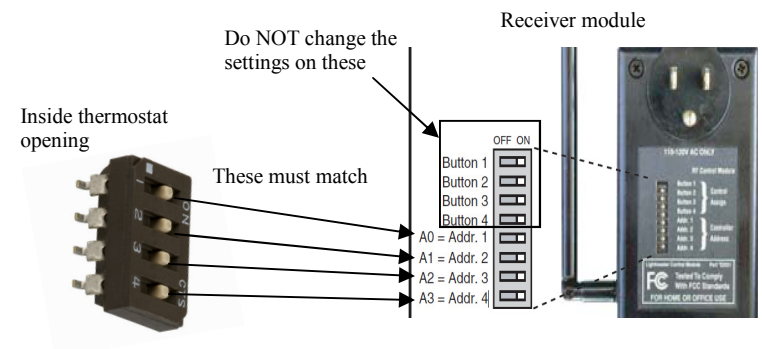
3-HOW TO USE

Let's check out the front control panel...



5-CAUTIONS

- The receiver / power module is rated for 1,800 watts (15 amps) at 115 volts AC. This is sufficient for up to a one horsepower motor. Do not overload this unit. Do not connect the unit to higher voltage sources.
- Do not open the cases of either the thermostat or the receiver / power module. Doing so will void the warranty.
- This equipment was designed to use with a plug-in type of evaporative cooler, NOT one that is permanently wired into your home's electrical systems..
- Do not place the thermostat in a location where there are changing temperature or humidity levels, such as near a door or window. Do not place near an air vent, or in a bathroom which has high humidity. Also, do not place the thermostat in direct sunlight, as this will cause incorrect temperature readings
- If you are conflicting with a neighbor, you will have to adjust the dip switches. On the back of the thermostat is an opening with a dip switch. There are 4 switches in one housing marked 1-2-3-4. All are set to on when leaving the factory. Change one of the four to off, and change the matching one on the receiver to off. The settings on both units must match. See below...



4-FIRST USE SETTINGS

When setting the unit up for the first time, make sure the power switch on the thermostat is on, and you can see the numbers on the display. Set the temperature to your comfort zone, around 75 degrees. Set the humidity for 40-45%. After several moments both the temperature monitor and humidity monitor symbols on the display should be on. Now the thermostat will start sending signals to the receiver / power module every 30 seconds. Set your evaporative cooler as you normally would, with the pump on. At night you will probably want a low fan setting, perhaps higher during the day if it is very hot outside. You may change the settings on your evaporative cooler while the thermostat is on. You may also change the settings on the thermostat while the evaporative cooler is running. Turning the power off on the thermostat will also turn the power off to the evaporative cooler.

For the best combined use of the ORKA Controller with your house A/C you need to pre-set the A/C thermostat. Set the A/C thermostat between 4 and 8 degrees higher than where you set the ORKA unit. When the humidity rises to the set limit of the ORKA controller the evaporative cooler will shut off. When the temperature in the building rises the A/C will switch on. The A/C will start reducing humidity while maintaining an acceptable temperature. When the humidity is reduced to the limit set on the ORKA controller the evaporative cooler will start again and the A/C will soon shut off. You now have control over humidity levels as well as temperature.

PLEASE NOTE: The thermostat does not send a continuous signal to the receiver / power module. It sends a burst of radio frequency data every 30 seconds. If you make changes they will not take effect till the next burst, which can be as long as 30 seconds

POWER ON / OFF—Press this button to turn the thermostat on. Press again to turn the thermostat off.

DECREASE SETTING---Press this button to decrease the desired setting.

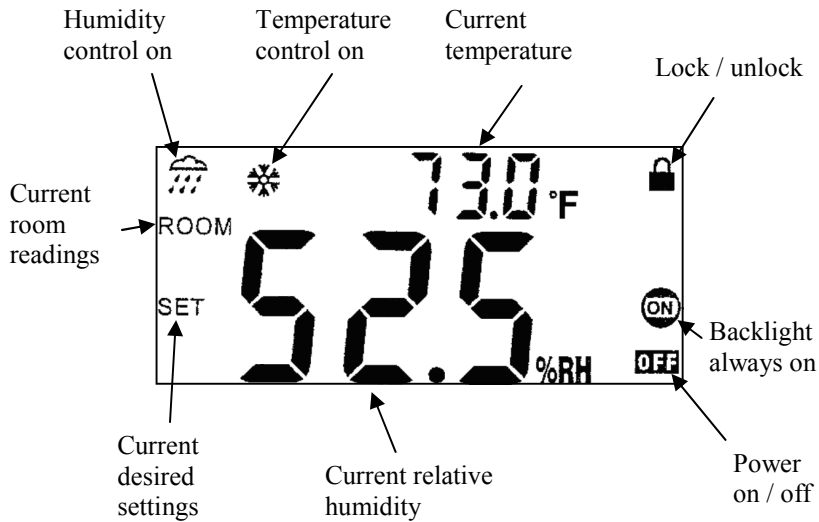
BACKLIGHT SWITCH---Press this button to permanently turn on the backlight. The backlight will come on for several seconds when you press any button, but if you press this button the backlight will stay on indefinitely until you press it again or until the thermostat is turned off (power off).

INCREASE SETTING---Press this button to increase the desired setting.

SWITCH (TEMPERATURE / HUMIDITY SELECT)---This button works with the “increase setting” and “decrease setting” buttons. When you press this button, the backlight will come on, and either the temperature (smaller numbers at the top of the display) or humidity (larger numbers in the middle of the display) will begin flashing. If you want to change the temperature setting and the humidity numbers are flashing, press the SWITCH button again and the temperature numbers will begin flashing. Then press the increase or decrease button till you reach the desired setting. After several seconds the display will return to normal mode, showing the actual room temperature and humidity .

*Note: The thermostat will remember which mode you adjusted last, temperature or humidity. If you want to make further adjustments to that setting you do not have to push the SWITCH button again. You can just push the “increase setting” and “decrease setting” buttons till you reach the new desired setting.

Let's check out the display...



Clockwise from bottom left...

CURRENT DESIRED SETTINGS & CURRENT ROOM READINGS---

When "ROOM" is on display shows current conditions. "SET" comes on when you push any button, display shows the settings you have selected.

HUMIDITY CONTROL ON---When this symbol is showing on the display it is telling you the current relative humidity in the room is lower than your cut-off limit. The evaporative cooler will turn on if the temperature in the room is above the level you have set. If this symbol is NOT showing, the relative humidity in the room is above your cut-off limit and the evaporative cooler will not turn on, regardless of temperature settings. (see note * on next page)

(continued next page)

TEMPERATURE CONTROL ON---When this symbol is showing on the display is telling you the temperature in the room is above the setting you have selected. The evaporative cooler will turn on as long as the humidity in the room is below your cut-off limit. If this symbol is not on, the temperature in the room is below the setting you have selected. If you want the cooler to come on set the desired temperature lower. (see note * below)
* Note: Both temperature and humidity indicators must be on for the evaporative cooler to turn on.

CURRENT TEMPERATURE---This shows the current temperature at the location of the thermostat. Pressing the SWITCH button on the control panel till these numbers flash will then allow you to change the desired temperature up or down. After several seconds the numbers will stop flashing and revert to showing the current temperature.

LOCK / UNLOCK---If you hold down both the INCREASE SETTING and DECREASE SETTING buttons at the same time for approximately 7 seconds, the lock indicator will come on. At this point none of the settings can be changed. To unlock, repeat the same procedure.

BACKLIGHT ALWAYS ON--- When this indicator is on it is telling you the backlight is set for always on. Press the center button marked SET to turn off backlight.

POWER ON / OFF---When the thermostat is turned off, the OFF indicator will show. When you press the POWER button for several seconds to turn on the thermostat, the OFF indicator will go out.

CURRENT RELATIVE HUMIDITY--- This shows the current relative humidity at the location of the thermostat. Pressing the SWITCH button on the control panel till this indicator flashes will then allow you to change the desired humidity cutoff point up or down. After several seconds the numbers will stop flashing and revert to showing the current relative humidity.