

6. Installing the Fans

6.1 Safety Instructions

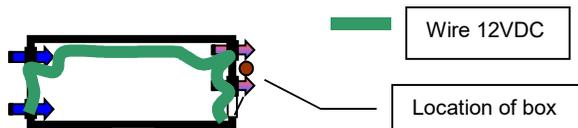
Do not use ATMOX fans to exhaust or intake hazardous or explosive materials or vapors. When you service and clean the fans, make sure the fans are disconnected.

6.2 Mounting Fans

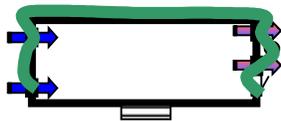
Installation will vary by fan and somewhat by size and opening available in the crawlspace. Please see specific information in the ATMOX Fan Specification Sheet relevant for the fan that you are installing.

6.3 Using Low Voltage Cable for Fan Installation

The low voltage wiring for connecting the fans is generally run through the crawlspace.



If crawlspace is very shallow or not even accessible then the wiring can be run from the outside as well.



If running wire from the outside, the cable can easily be brought behind the fan at a corner of the grill.

Steps for hooking up fans to low voltage cable

The DC-Powered Fans will receive their power from the gray ATMOX Power Supply attached to the ATMOX EZ Controller.



1. Use a low voltage 14 gauge cable.
2. Connect the red and black banana plugs to the end of the cable
 - a. On one end of wire, pull the two strips apart about 2-3 inches down.
 - b. Strip the ends of the wire to prepare them for banana plugs.
 - c. From the cable, select the wire with the grooves on the side. Use this as the negative (-) side. Mount the black banana plug on this side.

- d. From the cable, select the other wire with the writing on the side. Use this as the positive (+) side. Mount the red banana plug on this side.
- e. The banana plugs mount by inserting the cable and then tightening the screw on the back until it holds tight. (Screwdriver provided)



- f. If you purchase cable on your own and the markings are different, it doesn't matter as long as you are consistent with a positive and negative side.
- g. The jacks for the banana clips are color-coded on the power supply. They should only be connected AFTER the wires are all hooked up to the fans.



3. Inside the crawlspace begin pulling the wire through the crawlspace going around to all the locations where the fans will be located. To keep the wire out of the way and off the ground, staple the wire or use nailing clips to secure the wire to the joists. Leave extra slack at each fan location to work with the cable.
4. At the fan location, separate/split the 14 gauge cable in the middle for about 6 inches. Use a knife to split the wire.



5. Take the fan connector wire that is provided. **The wires are already prepped and should not be cut off.** If you do the cut the wires, then you will need to strip 1 inch of wire insulation from fan connector wire and twist the copper back onto itself over the insulation on each side. This is important to make sure that there will be a proper connection.

6. Mount the yellow banana clips (provided).
 - a. Take your negative (-) wire (with the grooves) on low voltage cable and insert into the banana clip so that it goes completely through the clip. Then take the fan wire and take the cable with the white line (or dotted white line) on it and insert into the banana clip so that it is on the side that goes halfway through. Take pliers to push the metal down into the wire. Then close up the cover on the clip.
 - b. Take the positive (+) wire (with the writing on it) on low voltage cable and repeat the same step as (a) using the fan wire cable that does not have the white line on it.



7. Plug the coax cable from the fan wire into the jack on the back or side of the DC fan



8. Repeat steps 4 through 7 for each fan.
9. Test the fans to make sure that they are all working properly. Fans can be tested by manually starting fans as described in Section 1.5. Once running, check to see if all of the fans have started. If there are fan issues, see troubleshooting section of manual.

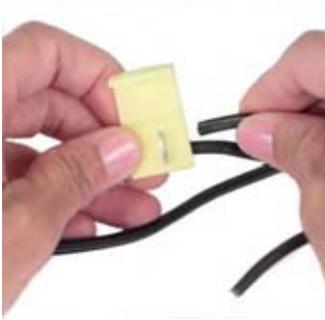
Using Multiple Low Voltage Cables

It is possible to use multiple low voltage cables at the same time. There are two basic ways to connect or use multiple cables.

1. Each low voltage cable can have a separate set of banana clips and run directly from the Power Supply Box. The banana clips can be plugged in on top of one another.



2. The low voltage cable can also be connected with extra snap splices (4 supplied).



The second low voltage cable can be added to the first with two additional snap splices. The cable would attach in the same manner as described in adding the wire connector for the fans in Sections 4-6 above. The second cable would need to be split and attached to the primary cable making sure positive and negative are consistent. The second cable can be attached at the end of the first cable or at any location in the middle as needed for layout.

7. Electrical Connection and Connecting to Battery from Green Energy Source

Electrical Connection 120 Volt

The entire system only needs up to 150 Watts of power and can be plugged into an existing outlet. The system will require this outlet even if using optional battery as described below.

Battery Connection from Green Energy Source (Must be Factory Installed)

The ATMOX EZ System has the option to be powered almost entirely from a green energy source, which would most likely be solar panels although any source that can charge a battery would work.



If your ATMOX System has been equipped with the option to use a battery connection, the bottom of the EZ Controls power supply box will have green and black plugs on bottom right side along with a Fuse.

For more information on setting up battery connection from green energy source, please contact ATMOX directly.

8. Starting the System

8.1 Powering Up System

The EZ System will start automatically when you plug the power supply into an electrical outlet. During the time the system is booting up, the alarm light will flash. The alarm should go away within about 20 seconds. The system will not start the fans with an alarm.

The software in the system comes with preloaded parameters. These parameters are detailed in Section 10. If you have any questions or believe you need to make an adjustment, please contact us for detailed instructions on changing parameters or settings other than those described in this manual.

8.2 Viewing Information

Details of information on display screen are outlined in Section 10.1.

9. Checking the System

9.1 System Checklist

Once the system is installed, it is recommended to go through this checklist to make sure that everything is working properly.

a. Alarms

If there are any alarms, such as not reading Inside/Outside Sensor Missing, please see Section 11 for Troubleshooting.

b. Manually Check Fans

Check that all the fans are operational. By manually turning fans on as described in Section 10.3, you can activate the fans. Once manually turned on, physically check to make sure each fan is running. Once complete, set fans back to the automatic mode.

For any problems encountered, see Section 11 for Troubleshooting.

9.2 Custom Setup

While there are several optional custom setup options, it is generally recommended to leave most settings at the factory installed settings. However, the following setting should be reviewed.

Humidity Alert

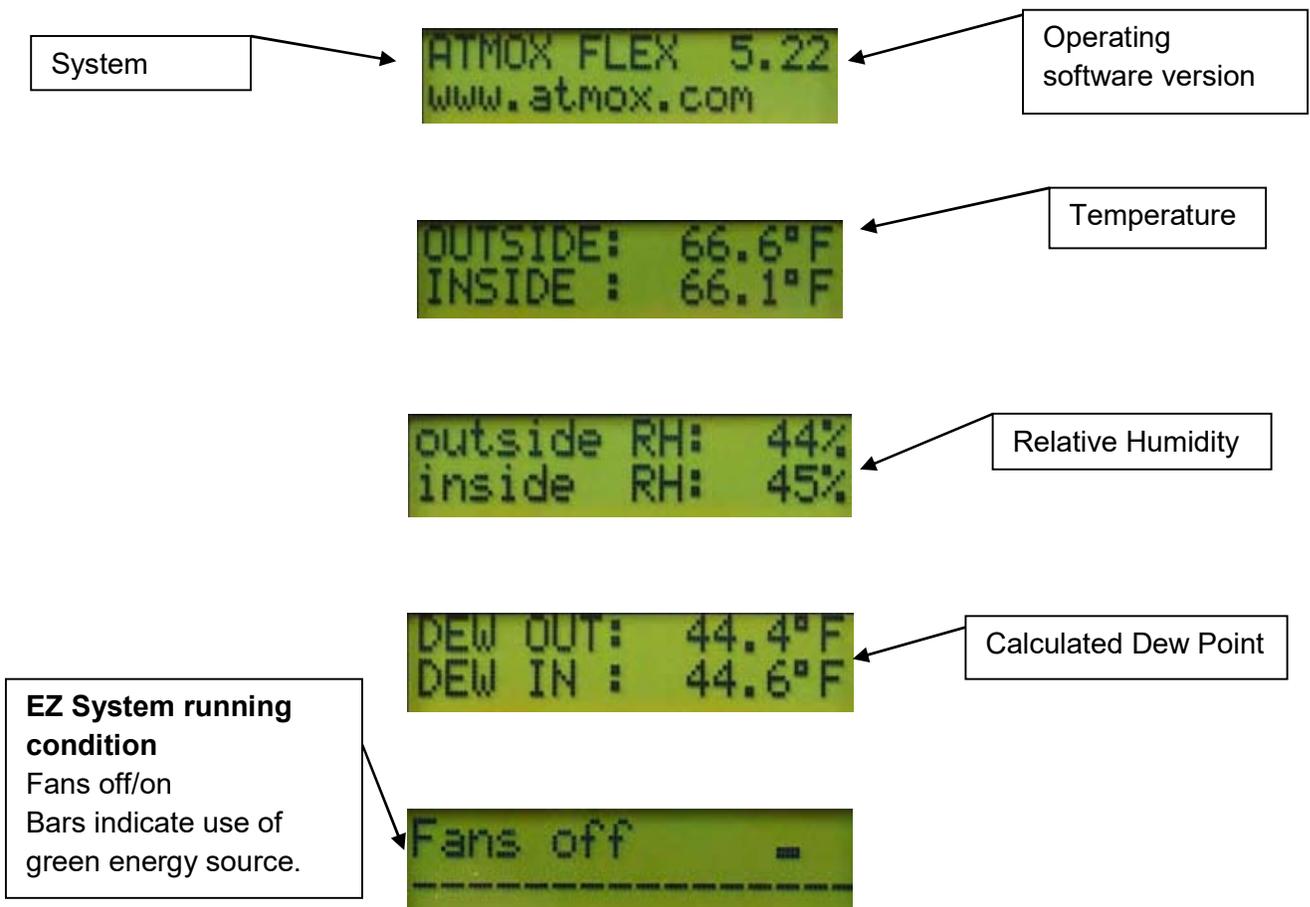
Choose whether or not you want to have the humidity alert option. The default option is OFF. If desired, it needs to be activated. See Section 10.5.5

10. ATMOX Software Information

The software in the ATMOX System is setup with default settings for most houses in the United States. Regardless of your ATMOX setup and configuration, generally no custom settings are necessary nor are they recommended. This section of the manual provides an overview of the software and display information. Additionally, it covers adjustment parameters that could be used when applicable. **Please contact ATMOX INC before making any custom adjustments in your controller.**

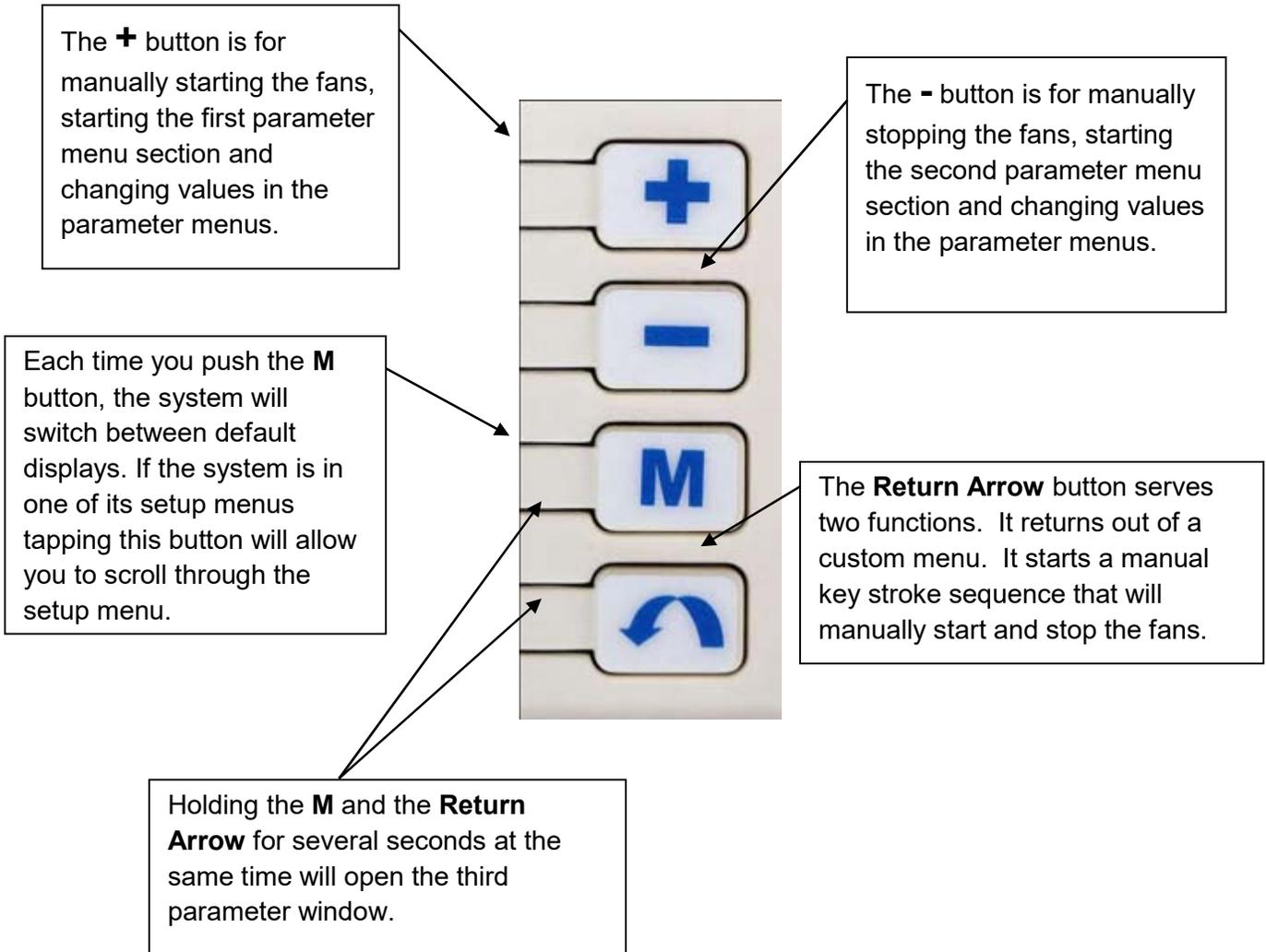
10.1 Display Information

The ATMOX Controller auto rotates between five standard information screens.



10.2 Control Buttons

ATMOX Systems have four control buttons to control the system, adjust system from defaults and test hardware attached to the system. From these buttons you can manually turn the fans on and off, change quickly between default information screens, and get to any of the three setup parameter menus.



10.3 Manual Operation of Fans

To start the fans manually:



To stop the fans manually:



Note: After tapping the return arrow, the manual light should be lit before you tap the + or – keys.

The system will return to automatic in one of three ways:

- After 24 hours the system resets automatically.
- If you unplug the system or the power is reset it restarts in automatic.
- If you input the same start/stop command a second time in a row, it will reset to automatic.

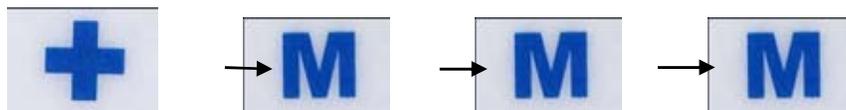
10.4 Energy Saving Features

You will notice that when the ATMOX system is in automatic it may not respond as quickly as you would consider normal. The ATMOX system is designed with a time delay when switching operations. This stops the system from changing too quickly and using excessive power due to surging power on and off of the components. It may take as long as 45 minutes to completely switch from a certain mode to another.

10.5 Accessing and Adjusting the + Menu

10.5.1 The + Menu

- A. The first menu is accessed by tapping the  button one time.
- B. Transitioning to each setting in the menu is done by tapping the  once each time.
- C. If you pass a setting you want to change keep tapping the  and it will return in a loop to the setting that you want to change.

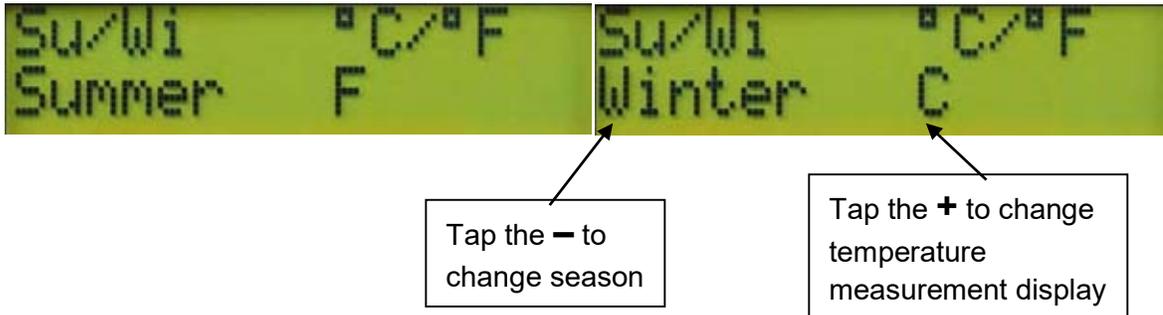


- D. To change settings use the  and  buttons to change the value.
- E. Once you have made any adjustments tap the  to go back to the default screens.

10.5.2 The Summer/Winter Mode and Fahrenheit/Celsius Adjustment

The **Su/Wi** screen displays what season the system is operating in and if it is displaying Fahrenheit or Celsius. The system automatically adjusts between Summer and Winter Mode so there is generally no reason to adjust this. The system can be forced into the other season mode.

The ATMOX System default is set to display Temperature and Dew Point in Fahrenheit. This can be changed to Celsius if desired.



10.5.3 The No Ventilation Temperature Setting

The **NO VENTILATION** screen controls the minimum temperature the system will ventilate in. In a Summer Mode, it measures the temperature from the inside sensor. In a Winter mode, it measures the minimum temperature on the outside sensor. This setting has a range of 35-59 degrees F.

The default setting is No Ventilation if below 45 degrees F.



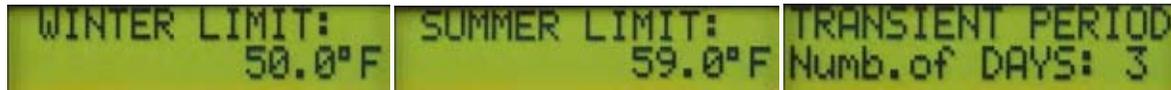
10.5.4 Summer and Winter Mode Transition

The next three screens adjust the settings that allow the system to automatically transition between Summer and Winter modes.

- Winter Limit Setting: For the system to switch to the Winter Mode, the temperature cannot exceed the set temperature for the number of days set by the transient period. The default setting is 50 degrees F and has a range of 50-55 degrees F.
- Summer Limit Setting: For the system to switch to the Summer Mode, the temperature must exceed the set temperature for the number of days set by the transient period. The default setting is 59 degrees F and has a range of 59-69.5 degrees F.
- Transient Period is the number of consecutive days the system has to exceed or not go above to switch modes. The default is 3 days and can be set between 0 and 5 days.

Use the + or - Keys to adjust the settings.

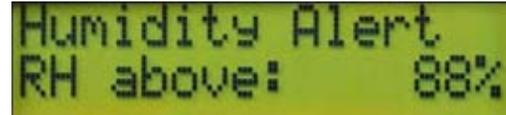
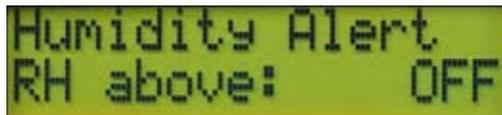
NOTE: If you set the transient period to 0 days the system will not automatically change seasons and you must manually change the season in the Su/Wi screen.



10.5.5 Humidity Alarm Setting

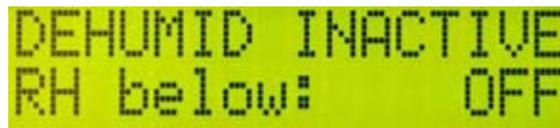
The humidity alarm setting is defaulted to the off position. This feature can be turned on to alert you anytime the crawlspace exceeds a set internal relative humidity level. It can be set anywhere between 73-98%, in increments of 5%.

Note: It is not recommended to set this alarm setting below a relative humidity level of 88%. The alarm may trigger on and off too often if set lower. Temperatures and humidity levels in crawlspaces can swing a great deal from day-to-day weather conditions. Even if the alarm goes off for short periods of time, it does not mean you have a problem as fluctuation is normal. However, if you have the humidity alarm set at 88% and the alarm is consistently triggered, then the setup of the ATMOX system should be reviewed. In this case, contact ATMOX or your installer to check on your crawlspace and see if a dehumidifier needs to be added to the system. While the ATMOX EZ system cannot incorporate the use of a dehumidifier, it is possible to upgrade the ATMOX EZ system to an ATMOX FLEX system if a dehumidifier is desired. The power supply and fans used would be the same. Contact ATMOX for more information.

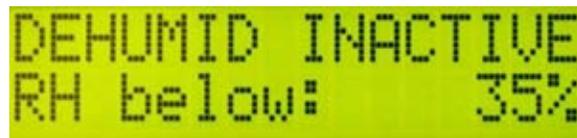


10.5.7 Dehumidification Inactive Setting

In some extremely tightly sealed crawlspaces or in a few very dry winter climates, it is possible for the crawlspace to become too dry based on continued ventilation with outside dry air. This occurs in very rare circumstances, so the default setting is OFF.



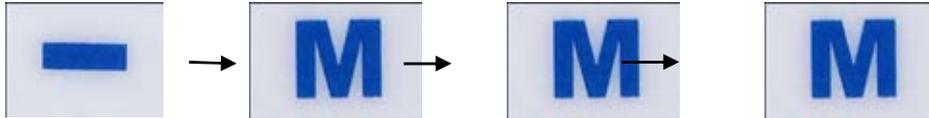
If there is a concern about too much drying, the ATMOX EZ System can be set to stop further ventilation or dehumidification when the relative humidity level inside the crawlspace reaches a set low point. The setting trigger point can be set anywhere between 30-50% relative humidity in 5% increments. Once the humidity level reaches this low trigger point, the ATMOX System will no longer ventilate further with outside air.



10.6 Accessing and adjusting \square menu setup parameters.

10.6.1 The - Menu

- A. The first panel is accessed by tapping the  button one time.
- B. Transitioning to each setting in the menu is done by tapping the  once each time.
- C. If you pass a setting you want to change keep tapping the  and it will return in a loop to the setting you want to change.



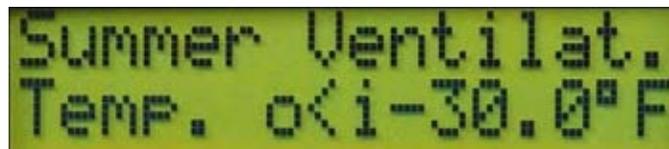
- D. To change settings use the  and  buttons to change the value.
- E. Once you have made any adjustments tap the  to go back to the default screens.

10.6.2 Summer Ventilation Temperature

This screen sets the spread at which the system runs between the inside and outside temperature in the Summer mode. The default setting you see on the screen is **O < I Less than -30.0F**. This means at its default setting, the fans will not run if the outside temperature is greater than 30 degrees F over the internal temperature. This setting has a range from 50 degrees F to -50 degrees F.

A scenario in which you may want to change this is if you have an outside sensor in the sun, and the black finish of the sensor excessively heats the sensor giving a higher than normal reading. In this case, you may want to change the setting to -50 degrees F.

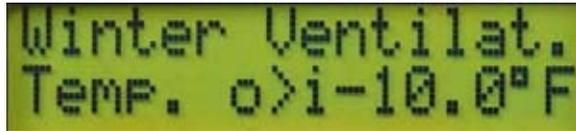
Another scenario is if you are located in the Midwestern United States where you often have very dry hot air in the summer outside. This setting can help to avoid too much hot air under the house heating the structure excessively. If you set the setting to 0 degrees F the system will not run with outside air until the inside temperature is equal to or greater than the outside temperature.



```
Summer Ventil.  
Temp. o<i>-30.0° F
```

10.6.3 Winter Ventilation Temperature

This screen sets the spread at which the system runs between the inside and outside temperature in the Winter mode. This works basically like the Summer mode, but it reverses for winter temperatures. The default setting you see on the screen is **O > I Less than -10.0F**. This means at its default setting the outside temperature for the fans to run cannot be more than 10 degrees F under the internal temperature. This setting has a range from 50 degrees F to -50 degrees F.



Winter Ventilat.
Temp. o>i-10.0°F

10.6.4 Summer Dew Point

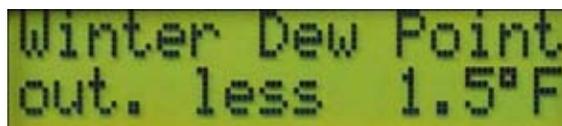
This setting is for the difference desired in dew point to start ventilation when the system is in a Summer mode. The default setting is 1 degree F and it has a range of -18 degrees F to 18 degrees F. So with a setting of 1 degree F it will not start ventilating with outside air until the dew point is at least 1 degree F lower than the inside.



Summer Dew Point
out. less 1.0°F

10.6.5 Winter Dew Point

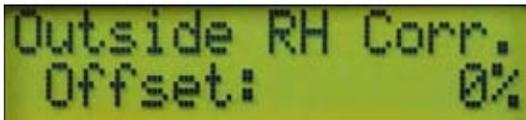
This setting is the same as the Summer Dew Point setting but is for when the system is in the Winter mode. The default setting is 1.5 degrees F and has a range of -18 degrees F to 18 degrees F. As with the summer mode, the default winter setting will not start ventilating until the dew point is at least 1.5 degrees F lower. If you find that your house and crawlspace are drying out excessively in the winter months, you can set this number to a negative number and if in a proper range the system will hydrate a house. Note: This can be dangerous if set too high in the wrong climate.



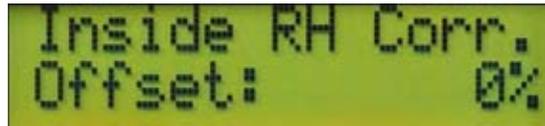
Winter Dew Point
out. less 1.5°F

10.6.6 Sensor Adjustment Screens

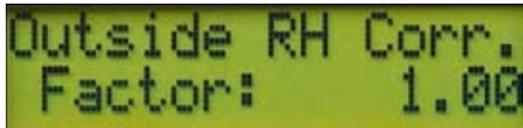
There are 2 sensor adjustment screens. These settings are only used when calibrating the sensors. If a sensor needs adjusting, it will have the values written on the side of the sensor. The values can then be programmed here into these screens. Note: This would already be completed prior to shipment and should generally not be done by a customer.



Outside RH Corr.
Offset: 0%



Inside RH Corr.
Offset: 0%



Outside RH Corr.
Factor: 1.00



Inside RH Corr.
Factor: 1.00

10.7 Accessing and Adjusting the **SETUP** menu parameters.

10.7.1 The **SETUP** Menu

- The first panel is accessed by tapping and holding down the  button.
The manual light should now be on.
- Now while holding down the Return Arrow button, press and hold down the  button at the same time for 5-10 seconds.
- Once you are in this menu, it should read **SETUP Recall Factory Setup**.
- Use the  button to scroll through the options.
- If you pass a setting you want to change, keep tapping the  and it will return in a loop through all the settings.



- To change settings, use the  and  buttons to change the value.
- Once you have made any adjustments, tap the  to go back to the default screens.

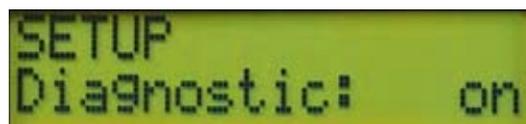
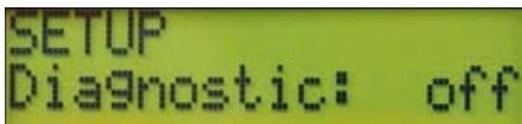
10.7.2 Resetting the System to Factory Defaults

The system can easily be reset to all of its factory default settings. To do this, go to the first screen in this menu. When it reads SETUP Recall Factory Setup, tap the  button one time and you should see "SETUP". To confirm, press . Tapping  will then reset everything and it will go back to the SETUP Recall Factory Setup. All default values have been restored to original settings.



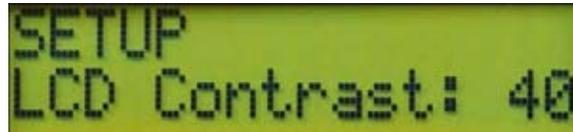
10.7.3 SETUP Diagnostic

The SETUP diagnostics screen is not used in the ATMOX EZ system. This setting should remain "off".



10.7.4 SETUP LCD Contrast

You can adjust the contrast of the LCD Display Screen if it is difficult to read. You can use  or  to darken or lighten the display.



10.7.5 Freeze Warning

The system has a default freeze warning of 34 degrees F. This can be manually adjusted from a range between 32 degrees F and 50 degrees F. If the internal temperature reaches the set freeze warning amount, then it overrides all other programming to discontinue use of all fans. The purpose of this is to avoid excessive cold air being actively brought into the crawlspace during extreme winter temperatures.



10.7.6 No Ventilation Outside Temperature Override

The **NO VENTILATION** screen controls the minimum temperature the system will operate the external fans for ventilation regardless of parameters set in Summer Mode operation in Section 10.5.3. In a Summer Mode, the no ventilation setting measures the temperature from the inside sensor. This is a secondary no ventilation mode if the outside temperature drops suddenly while the system is still in a Summer mode or in the transient period. If the outside temperature falls below this set point, then this setting will override all the other parameters and stop ventilation. In a Winter Mode, the system always measures the minimum temperature on the outside sensor so it will stop at the higher of the settings between Section 10.5.3 and this setting. This setting has a range of 32-40 degrees F and can be turned off.

The default setting is No Ventilation if below 36 degrees F.



10.7.7 Crisis Mode

Crisis mode is a very special function of the ATMOX System. Due to the dynamics of the air in a crawlspace, this mode expands the operational limits with the outside air to improve the conditions in the crawlspace. By using this greater air range, the system tries to use the warmer outside air to heat the crawlspace and dissipate cold buildup due to A/C ducting. This happens if the system is within operational limit parameters and the crisis trigger point has been exceeded. The Crisis Mode is triggered anytime the inside humidity reaches 90% or higher.

There are 4 set points for the Crisis mode: Off, On Delta T 0.0 Degrees F, On Delta T 2.0 Degrees F and On Delta T 4.0 Degrees F. The calculation and comparison of conditions to activate fans under Crisis mode is fairly complicated. The default setting of Delta T to 0.0 Degrees F provides the greatest range for fan operation under Crisis Mode.



11. Trouble Shooting

11.1 Alarm Errors

Inside/Outside Sensor Missing

- Check the sensor directly from the box without any extension wires or couplers to determine if issue is with the sensor or the extension wires and couplers.
- Check to see if sensor is connected and plugged in properly.
- Make sure the jacks are properly crimped if you did any of this yourself (Don't forget to check the two jacks at the couplers.) (Convention of wires is important; all black wires on the left.)
- Check that any of the jacks on the extension wires are not loose and getting a good connection. The jacks can be sensitive if the wires have been pulled on and loosened from the jack.
- It is very rare for a sensor to get damaged during shipping and/or installation. If this happens, the sensor would have to be replaced.

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outside RH: 50%  
inside RH: none
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Sensor Defect

- This is an unusual error message. If this error message occurs it could be an indication that sensor is damaged or a line interference problem.
- If you see this message, first restart the EZ system by unplugging and replugging the power. If the error is still there, then either the sensor or the wiring is damaged and may need to be recrimped or replaced. Check the crimp on the jack to make sure all wires are connected. If the error is consistent, then the sensor could be defective.
- If the error message is inconsistent and comes and goes, then there could be interference on the data being transmitted to the control box. Please contact ATMOX with any questions.

11.2 No Alarm Errors but Manual Check of Fans Not Starting

- Check for positive and negative consistency on low voltage cable and snap splices. The fans will not operate if this has been reversed somewhere.
- Check that there is a proper connection at each snap splice location. Copper wire from the fan connector wire must be exposed to make contact with snap splice. Installation is described in Section 6.3.
- When manually starting or stopping the fans, you should hear a faint click in the gray power supply box. If you do not hear this sound, please contact ATMOX.

If checking these items does not solve the problem, please contact us at 704-248-2858 for assistance.

12. Limited Three-Year Warranty of ATMOX System

When installed, operated, used and maintained as intended in residential applications and according to the instructions supplied with ATMOX products, ATMOX warrants its products for a period of 3-years from the date of purchase against any defects in material and workmanship. The products covered by this warranty include the control boxes, fans, sensors and wiring manufactured by ATMOX. ATMOX will repair or replace, at ATMOX's option, any ATMOX product or component found to be defective within the 3-year warranty period.

ATMOX products are designed to improve conditions in the crawlspace, basement or attic, yet are limited by atmospheric and natural conditions over which ATMOX has no control and which are not covered by this warranty. ATMOX products are not warranted against damage caused by electrical surges, fire or other casualty, vandalism, or acts of God (including lightning strikes and floods). This warranty does not make representations regarding mold, insects, termites, water, rot, electrical, HVAC, roof, framing, foundation, floors, drywall, gutters, ice dams or other problems that may occur in a house structure. The warranty does not include any costs of removal or reinstallation.

Third-party products by other manufacturers sold by ATMOX (such as dehumidifiers) are not covered by this warranty but may be covered under separate warranties by the product's manufacturer. Purchaser should contact third party manufacturers for warranty claims and coverage of third-party products not manufactured by ATMOX.

ATMOX INC'S LIABILITY UNDER THIS LIMITED WARRANTY IS STRICTLY LIMITED TO REPAIR OR REPLACEMENT OF DEFECTIVE ATMOX PRODUCTS. OTHER THAN THE WARRANTIES EXPRESSLY DESCRIBED HEREIN, ATMOX DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ATMOX WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow certain limitations and exclusions of warranty, so these 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.

13. Contact Information and to Obtain Warranty Coverage

ATMOX INC

10612-D Providence Road #229

Charlotte, NC 28277

Phone: 704-248-2858

Fax: 704-675-9858

Email: info@atmox.com

Website: www.atmox.com