2nd Generation Controls
Installation & Operation Manual

Thank you for purchasing an AirScape® whole house fan. The industry-leading 2nd generation control package included with this fan allows you to operate it from any location within your home using a variety of different devices, including: the included hardwired wall switch; one or more optional wireless remotes; or, any computer, smartphone, or tablet with access to your home's Local Area Network.

The 2nd generation controls also allow a variety of optional accessories to be used with your fan. Among these are the TSP 2nd Generation Controls, which gauges and displays indoor and outdoor temperatures to assist you in choosing when to operate your fan, and the SafeSpeed™ DPS pressure interlock, which prevents the fan from dangerously depressurizing the home.

Before installing any element of these controls, or any other accessory, please inspect them for any damage they may have sustained during shipping. Do NOT install damaged equipment. If you suspect any item has been damaged in shipping, or have any questions regarding these controls or their installation, please contact AirScape technical support by phone at 1.866.448.4187 or email at experts@airscapefans.com.

INCLUDED ITEMS

The following items have been included with these controls:

- One hardwired wall switch.
- One wall switch mounting bracket.
- 50 feet of Red CAT5 cable.
- Network control interface.

ITEMS NOT INCLUDED

The following items have NOT been included with these controls:

- Ethernet cable (CAT5 or CAT6) for connecting your fan's controls to your network's router.
- Computer, smartphone, or tablet with which to access network controls.

The following OPTIONAL accessories are available for the 2nd generation control package:

- One or more wireless remotes.
- TSP Temperature Sensing Package.
- SafeSpeed DPS Pressure Interlock Kit.

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CONTROL INTERFACE OVERVIEW

AirScape 2nd generation controls allow your fan to be controlled by hardwired wall switches, wireless remotes, and/or any computer, smartphone, or tablet with access to your home's network. Regardless of the device with which you choose to operate your fan, the control interface looks and operates the same: There are four buttons that turn your fan on or off, increase or decrease its speed, and set its timer:

To turn your fan on, press the **POWER ON / SPEED UP** button. The fan is programmed to start on its lowest speed setting. To increase your fan's speed, press this button again: its speed will increase to the next higher setting. Pressing this button repeatedly will incrementally increase the fan's speed until it reaches its highest setting.

To decrease your fan's speed, press the **SPEED DOWN** button. The fan's speed will decrease to the next lower setting. Pressing this button repeatedly will incrementally decrease the fan's speed until it reaches its lowest setting.

To set your fan's timer, press the **TIMER** button. The timer will be set to 1 hour, after which the fan will automatically turn off. To increase the timer's setting, press this button again. Each time you press this button, the timer's setting will increase by 1 hour, up to 12 hours total. If you'd like to increase or decrease your fan's speed while its timer is running, press the appropriate button, doing so will not affect the timer. The timer resets each time the fan is turned off.

To turn your fan off, press the **POWER OFF** button. The fan will turn off at any speed, canceling any remaining time on the timer.

BASIC INSTALLATION OVERVIEW

When installing your fan, you will need connect your fan's control panel to its hardwired wall switch, your home's local area network router (if you'd like to control the fan using its network controls), and to any wireless remotes, TSP temperature sensors, or SafeSpeed interlock you have purchased. The general scheme for these connections is described in Figure 1 below.

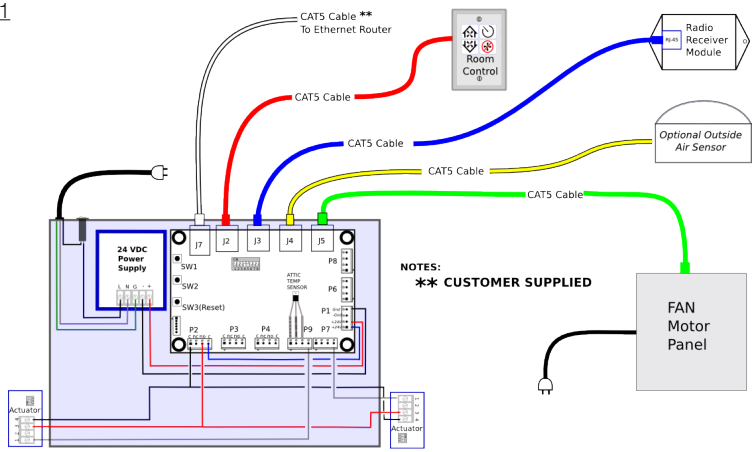
Because a hardwired switch is necessary for providing technical support, the wall switch included with this fan MUST be connected to the fan's control box regardless of whether or not it will be installed in a wall. **FAILURE TO CONNECT THE HARDWIRED WALL SWITCH WILL VOID THESE CONTROLS' AND YOUR FAN'S WARRANTY!** If it is not desired to be installed in a wall, the hardwired switch can be connected to the control box and left in the attic with the CAT5 cable kept spooled.

All connections are made using CAT5 cable. Cable will be supplied with the fan or accessory for most connections. However, since we cannot anticipate the length of cable necessary to connect the control panel to your home network's router, cable will NOT be provided for this particular connection.

When making these connections, look for a series of five RJ45 ports on the side of the control box with the following label:

Since making a connection using an incorrect port can damage the controls, it is important to note which ports are for which connections. The white **WEB** port is used to connect to your home network; the red **W/S** port is used to connect the hardwired wall switch; the blue **RMT** port is used to connect a wireless remote reciever; and, the yellow **AUX** port is used to connect the TSP's outdoor temperature sensor. If you have purchased a 2.5e, 3.5e, 4.4e, or 5.0e model fan, the green **FAN** port is used to connect the fan assembly to the control box located on the damper box (this port is not used with the 1.0 or 1.7 models).

Figure 1



Main Control Panel

WALL SWITCH INSTALLATION

To install a hardwired wall switch, first connect the included red CAT5 cable to the red **W/S** port. Run the cable through the attic and down a wall to the desired location for the switch. **This cable is unshielded: do not run it parallel to high-voltage wiring.** Building codes usually require unshielded low-voltage cable to be run through shielded conduit. We also recommend CAT5 cable to be replaced with CAT5e or CAT6 for runs longer than 25 feet.

Next, from within the living space, use the switch's mounting bracket as a template to trace an outline where the switch is desired. Following this outline, cut a hole for the mounting bracket.

Then, place the mounting bracket inside the hole and secure it with its locking tabs by tightening the silver screws. Finish by connecting the free end of the CAT5 cable to the port in the back of the wall switch. Set the switch in place and secure its face plate to the mounting bracket using the attached white screws.

If you will be installing a 2nd Generation Controls, or anticpate you may want to in the future, we strongly recommend installing the switch only on an insulated interior wall, and locating the switch away from any sources of heat such as exterior walls or direct sunlight.

All wall switches must be installed in accordance with all local codes and standards.

Figure 2a

Use the mounting bracket as a template to mark the wall switch hole location.

Figure 2b

Cut out the hole.

Figure 2c

Place the mounting bracket and secure its locking tabs by tightening the silver screws

Figure 2d

Connect the CAT5 cable and attach face plate to mounting bracket with provided screws.

2ND GENERATION CONTROLS (OPTIONAL)

The 2nd Generation Controls ("TSP") enables you to observe the temperature inside and outside of your home, allowing you to easily determine if conditions are suitable for operating your fan. This optional accessory is NOT included as a standard element of the 2nd generation controls package.

IF you have purchased the TSP accessory, it will include: an upgraded wall switch (which houses the interior temperature sensor); an outdoor temperature sensor; and, a single 50 ft. length of CAT5 cable.

Networking
The readings from the TSP's temperature sensors will only be displayed on your whole house fan's network controls, which requires your fan to be connected to your home's network. If you haven't already, connect the two using CAT-5e or CAT-6 cable (not included) run from your router to the white **WEB** port on the control box mounted to your fan's damper box.

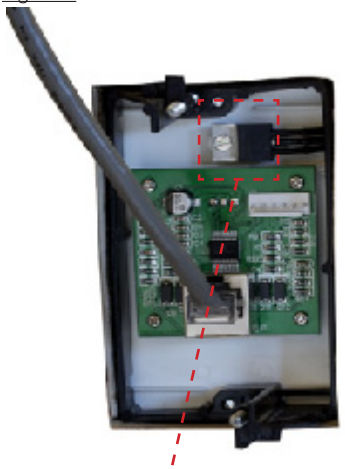
Interior Air Temperature / TSP Wall Switch
The TSP wall switch replaces the standard wall switch supplied with your whole house fan. This upgraded switch's face plate and control interface is identical to the standard model's, but also includes the TSP package's indoor temperature sensor (as shown in Figure 5 at right).

To install the TSP wall switch, unscrew the face plate of the standard wall switch from its wall bracket, unplug the switch, and replace it with the TSP wall switch.

If you have not previously installed the standard wall switch, please refer to the instructions for mounting a wall switch on page 4 of this manual.

To ensure the sensor's accuracy, make sure to install the TSP wall switch only on an insulated interior wall, and to position the switch away from any sources of heat such as exterior walls or direct sunlight.

Figure 5



The indoor temperature sensor is located inside of TSP wall switch

Outdoor Temperature Sensor
The TSP outdoor temperature sensor is housed within a tubular cover (shown at right in Figure 6). Mount this cover in your desired location using a standard wood screw (not included), taking care not to overtighten the screw and crack the cover.
To connect the temperature sensor to the control box, you will likely need to drill a hole through an exterior wall. 50 feet of CAT5 cable has been provided with this kit; keep this length in mind when selecting a location for the outdoor temperature sensor.

Use the supplied CAT5 cable to connect the temperature sensor (using the RJ45 port on the circuit board within its cover) to the yellow **AUX** port mounted on the control box mounted to your fan's damper box.
This cable is unshielded: do not run it parallel

Figure 6

to high-voltage wiring. Building codes usually require unshielded low-voltage cable to be run through shielded conduit.

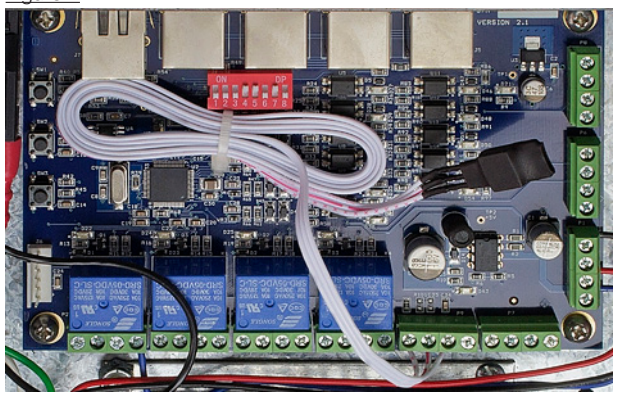
Some Tips for Ideal Sensor Placement:

- It is best to mount the sensor at least two feet above ground level.
- Install the sensor on a North facing wall, away from any exposure to direct sunlight.
- Avoid locating the sensor beneath an eave that itself is located above a lower-story roof (which would expose the sensor to radiant heat or heat pooling).
- Avoid locating the sensor in an area exposed to excessive vibration or electrical noise.
- **Install the sensor with its cover facing downwards, so as to prevent rain from entering or condensation from pooling.**

Attic Temperature Sensor
An attic temperature sensor has been installed on the fan's control board at the factory. You can complete its setup once your fan is installed in the attic.

First, unplug your whole house fan from the outlet supplying it with electricity. Next, use a flat-head screwdriver or ¼" socket to loosen the four screws on the control box's cover plate, and slide the the plate up and off of the box to expose the control board. The sensor is located on the end of a wire attached to the circuit board, and bundled centrally thereon (as shown below in Figure 7).

Figure 7



Attic temperature sensor wiring bundle.

Remove the cable tie securing the bundle and pass the sensor through one of the box's knock-outs. To manage the sensor wire, a strain relief has been included to mount into the knockout. You can leave the sensor hanging anywhere in the attic, but avoid placing it on a source of direct heat or a heat sink. Finish the setup by replacing the cover plate and reconnecting the fan to electricity.

Accessing Temperature Readings
Once installed, the readings from your TSP's sensors will display on your fan's network controls. Whatever device you use to access the network controls, the control interface will be the same and temperature readings will appear in the same location, as shown in Figure 3 on page 5 of this manual.

SAFESPEED™ DPS PRESSURE INTERLOCK (OPTIONAL)

If operated without an adequate number of windows open, your whole house fan will begin to depressurize your home. This can "pull" unwanted odors into the living space, and backdraft combustion appliances. The SafeSpeed™ DPS pressure interlock is an available accessory that can reduce the speed of, or shut down, your fan to prevent it from dangerously depressurizing your home. It is NOT included a standard element of the 2nd Generation Controls.

Figure 8

The SafeSpeed pressure sensor (shown at right in Figure 8) is typically installed in the attic close to the whole house fan. **To function properly, the sensor must be installed in a vertical orientation with the tubing connections pointed downwards;** use wood screws (not provided) at its pilot holes to mount it to a joist.

Please Note: the length of wiring provided for connecting the sensor to the fan's control board is 5 ft. Keep this length in mind when choosing a location for the sensor.

As shown in Figure 8, the sensor has two tubing connections. Connection P1 is for the tubing run to the outdoors. Connection P2 is for the tubing run into the indoors. Two lengths of clear vinyl tubing have been provided to make these connections; one is 5 ft. long, and the other is 25 ft. long. The outer diameter of each is 5/16".

To make the indoor connection, drill a small hole in the wood framing between the whole house between the grille. Insert the shorter length of tubing into the hole and seal the seam between around the tube with caulking to prevent leaks.

To make the outdoor connection, run the longer length of tubing to a vent and push the tube through it so that the open end is outdoors.

The Safespeed pressure sensor is EXTREMELY sensitive and will very easily produce innacurate readings if not installed with high precision. To minimize the possibility of inaccurate readings, you MUST follow the following guidelines below installing the sensor and tubing:

- Mount the sensor in a vertical orientation with the tubing connections pointed downwards.
- The tubing should not have sharp bends or kinks in it once installed.
- Leaky tubes or loose tube connections will result in inaccurate readings.
- Do NOT locate outdoor tube opening in an area exposed to high winds.
- Avoid locating the sensor in an area exposed to excessive vibration or electrical noise.

Once the tubing is installed, make the wiring connections from the pressure sensor to your fan's control box as shown in Figure 10 on the next page.

First, unplug your whole house fan from the outlet supplying it with electricity. Next, use a flat-head screwdriver or ¼" socket to loosen the four screws on the control box's cover plate, amd slide the the plate up and off of the box to expose the control board.

Connect the BLACK wire to terminal P6-4 on the control board and connect the RED wire to terminal P6-3. These wires will arrive already connected to the appropriate terminals on the

pressure sensor. For your references, Figure 11 below shows that the black wire originates at terminal 3 on the sensor and the red wire at terminal 1.

DIP switch 5 on the fan's control board must be set to the OFF (down) position for the Safespeed interlock to function. At right, Figure 9 shows DIP switches 4 and 5 in the ON position (the standard factory setting).

Figure 9

After resetting the DIP switch, you will also need to reset your fan's controls. First, reconnect the fan and controls to power. Then, locate button SW3 on the left side of the control board and depress it for 1 second—LED lights on the controller will turn off to indicate the reset is in progress.

Finish by replacing the cover plate.

Figure 10

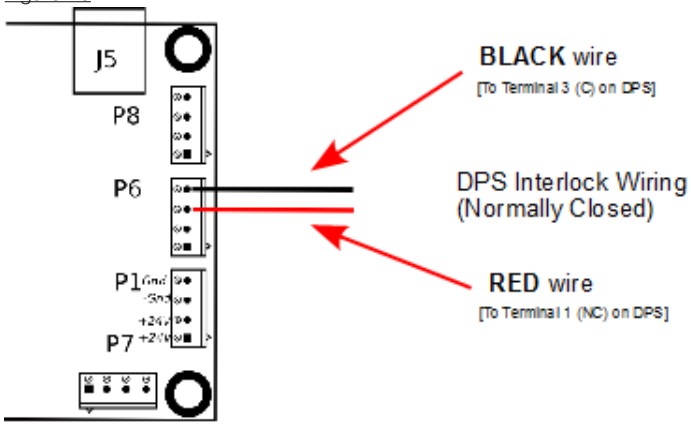
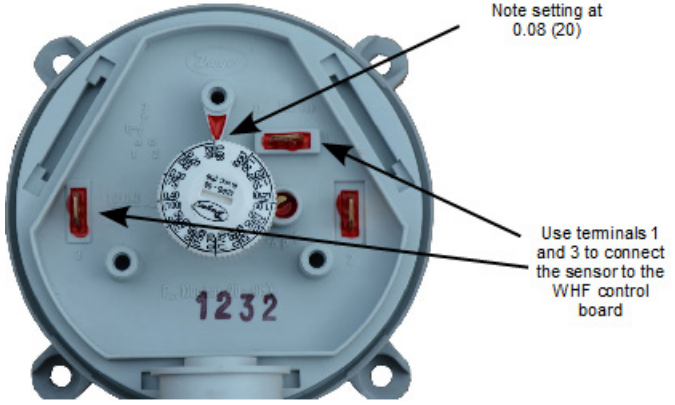


Figure 11



Safespeed Pressure Interlock Operation

Whenever your fan is operating, the Safespeed pressure sensor monitors the relative indoor-outdoor pressure. If, relative to the outside, the indoor air pressure drops below the interlock threshold, the fan's controls will begin to reduce its speed. The fan's speed will be reduced by 1 speed setting every 30 seconds until the relative indoor pressure is once again above the interlock threshold.

If the fan reaches its minimum speed setting, and the relative indoor pressure is still below the interlock threshold, Safespeed will turn the fan off entirely. The fan will not turn back on until a new start command is issued through any of its controls (wall switch, remote, etc.).

If the fan's speed is reduced, or is powered off, by the Safespeed sensor, its network control interface will display a "Reduced by Pressure Controls" message.

The Safespeed pressure sensor is EXTREMELY sensitive and will very easily produce innacurate readings if not installed with high precision. Since every home and every installation is different, it may also require some adjustment for realiable operation.

If your Safespeed is too frequently reducing the fan's speed speed or preventing it from operating entirely, please try some of these troubleshooting suggestions before contacting us for technical support:

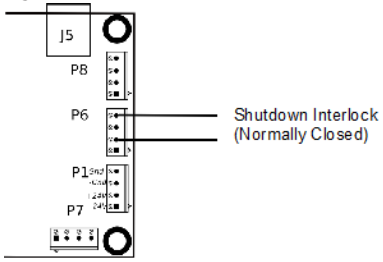
- Check that there is an adequate amount of open windows in the living space and net free ventilation from the attic.
- Confirm the correct orientation of the pressure sensor—perfectly vertical with the tube connection pointed downwards.
- Confirm the sensor tubes are firmly connect to the pressure sensor, are free of leaks and kinks, and that the outdoor tube is not exposed to wind.
- As a last resort, remove the pressure sensor's faceplate and adjust the interlock threshold upwards slighty to 0.20 (50) (see Figure 11 on page 9).

FAN SHUTDOWN INTERLOCK

Your fan's 2nd Generation Controls also allow it to be automatically shut down by interlocking it with devices such as smoke detectors and furnaces.

The interlock requires a DRY CONTACT, such as a relay contact, wired to terminals P6-2 and P6-4 on the fan's control board as shown below in Figure 12. Additionally, DIP switch 4 must be set to the OFF position (its factory default setting is ON).

Figure 12



This is a normally closed ("NC") interlock, so an open circuit ("contact") will cause the fan to shut down. The fan will remain off, even after the contact recloses, until a new start command is issued through any of its controls.

As with the Safespeed pressure interlock, you will reset your fan's controls to finish this setup. Locate button SW3 on the left side of the control board and depressing it for 1 second—LED lights on the controller will turn off to indicate the reset is in progress.

WIRELESS REMOTE (OPTIONAL)

A wireless remote (shown at right in figure 13) is an available accessory for your fan. It is not included as part of the standard 2nd Generation Controls package.

Figure 13

To install a wireless remote with this fan, first mount the wireless remote reciever on an attic joist near the control box using wood screws and the pre-drilled mounting holes.

Connect one end of the blue CAT5 cable provided with the remote control kit to the reciever's RJ45 port. Then, run the cable to the fan's control box and connect its free end to the blue **RMT** port. **This cable is unshielded: do not run it parallel to high-voltage wiring.**

The wireless remote has an average range of about 60 feet.

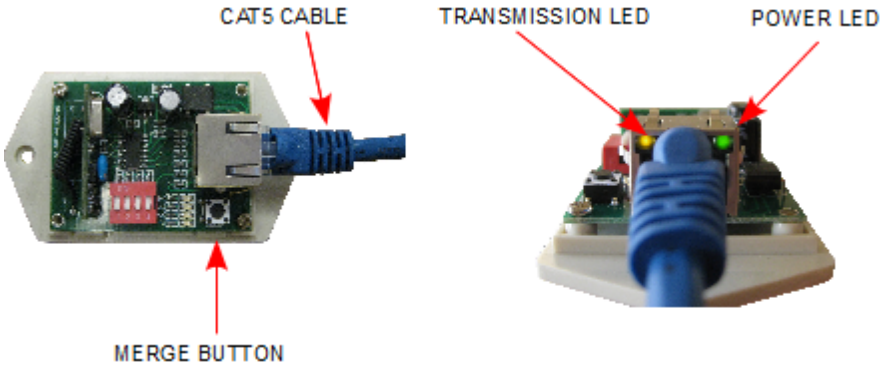
AirScape remote control transmitters and recievers are pre-merged at our factory. They may, however, become unmerged prior to installation. A remote control transimitter that has become unmerged from its reciever will not be able to control the fan. In this case, the transmitter and reciever will need to be remerged.

To merge a remote control transmitter and reciever, follow these steps (a guide to identifying the various parts of the remote reciever is provided below in Figure 14):

1. Remove the reciever's top cover.
2. On the reciever's circuit board, locate the black button labeled **LEARN**. Press and release this button to begin the merge sequence; the RJ45 port's yellow transmission LED will illuminate.
3. *Immediately* press and release any button on the wireless transmitter while the transmission LED is illuminated. If the merge is successful, the transmission LED will turn off.
4. Repeat steps 2 and 3 if there are any additional remote control transmitters to merge with the reciever.
5. Replace the reciever's top cover.

If the remote stops communicating with the reciever, follow the steps above to remerge the transmitter. Note: NEVER change the DIP switch configuration on the remote reciever.

Figure 14



NETWORK CONTROLS

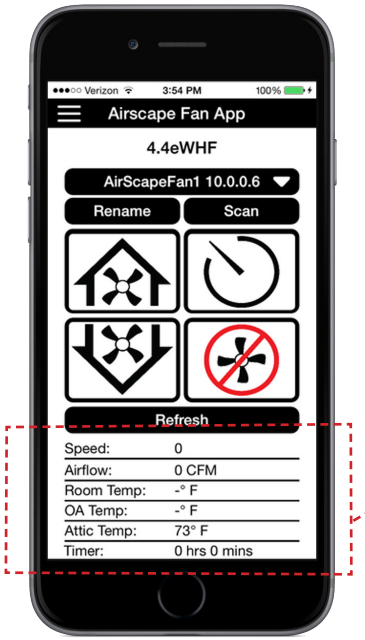
Your fan's 2nd generation controls are "network ready", which enables you to contol the fan using any computer, smartphone, or tablet with access to your home's Local Area Network.

Your fan must be connected to your home network's router to access its network controls. To connect the two, run ethernet cable from the white **WEB** port on the fan's control box to the router. Since we cannot anticipate what length of cable your particular installation might require, this cable has NOT been provided.

Once the two are connected, your router will automatically assign your fan an IP address through a process called DHCP. You will need this IP address to access the controls; it is easy to identify by its form: 192.168.xxx.xxx. This IP address will stay the same for long periods, but may change as a result of router resets, power failures, etc. Because of this, for your convenience we strongly recommend doing one or both of the following:

1. **Downloading the AirScape Fan Control App for your smartphone or tablet.** This app includes a "scanning" function that can automatically detect and access any AirScape fan's connected to your network. It is available on the App Store for iOS devices, and on Google Play for Android devices.
2. **"Fixing" your fan's IP address by reserving it on your router.** You can permanently assign your fan a particular IP address using your router's software. We've provided an overview on how to do this on our blog at http://blog.airscapefans.com/archives/ip-address-reservation. Once reserved, you can type the IP address into your internet browser's URL bar to access the fan's controls, and bookmark the page for future use.

Figure 3



Network Controls display performance data and optional TSP temperature sensor readings.

Whatever device you use to access your fan's network controls, the control interface will look the same (shown at left in Figure 3). An advantage of using the network controls is opportunity to observe your fan's current performance data such as its speed setting, airflow, and time on timer.

If you have puchased the optional 2nd Generation Controls ("TSP"), indoor, outdoor, and attic temperature readings will display on the network controls.

WARRANTY

Hardware
AirScape warrants the original end user ("Customer") that new AirScape branded controls will be free from defects in workmanship and materials, under normal use, for one (1) year from the original purchase date.

Software
AirScape warrants to Customer that the AirScape Controller software will perform in substantial conformance to its program specifications for a period of one (1) year from the date of the original purchase.

Failure to Install Hardwired Switch Voids Warranty
Because an accessible hardwired switch is necessary for providing technical support, the hardwired wall switch provided with these controls must be connected to the whole house fan to recieve technical and warranty support. This warranty is void if the provided hardwired wall switch is not connected.

Exclusions
This warranty excludes: 1) physical damage to the surface of the product, including cracks or scratches on the LCD screen or outside casing; 2) damage caused by misuse, neglect, improper installation, unauthorized attempts to open, repair, or modify the product, or any other cause beyond the range of intended use; 3) damage caused by accident, fire, power changes, other hazard, or Acts of God; or, 4) use of the product with any device if such device causes the problem.

Exclusive Remedies
Should a covered defect occur during the warranty period and Customer notifies AirScape, Customer's sole and exclusive remedy will be, at AirScape's sole option and expense, to repair or replace the product. Replacement products or parts may be new or reconditioned or a comparable version of the defective item. AirScape warrants any replaced product or part for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer.

Obtaining Warranty Service
Customer must contact and return product to AirScape, Product dealer or installer within the applicable warranty period to obtain warranty service. Dated proof of original purchase will be required. AirScape will not be responsible for Customer's memory data contained in, stored on, or integrated with any products returned to AirScape for repair, whether under warranty or not.

Warranty Exclusive
The foregoing warranties and remedies are exclusive and in lieu of all other Warranties, express or implied, including warranties of merchantability, Fitness for a particular purpose, correspondence woth description, and Non-infringement, all of which are expressly disclaimed by AirScape and its suppliers.

Disclaimer
Neither AirScape nor its suppliers shall be liable for incidental, consequential, indirect, special, or punitive damages of any kind, or financial loss arising out of or in connection with the sale or use of this product, whether based in contract, Tort (including negligence) or any other theory, evev if AirScape has been advised of the possibility of such damages AirScape's entire liability shall be limited to replacement or repair of the product.

For technical support or warranty-related issues, please contact us by phone or email at 1.866.448.4187 or experts@airscapefans.com.