

# AtmosAir™

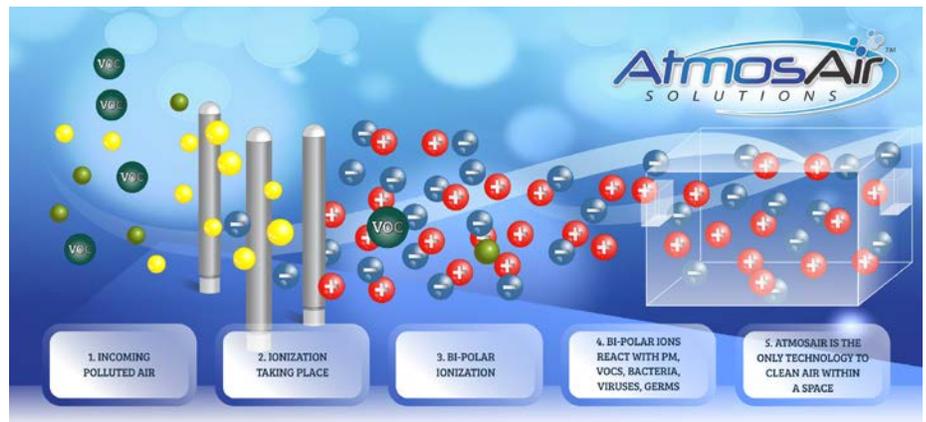
YORK® Air Handling Systems have partnered with AtmosAir™ Solutions for high-efficiency, chemical-free air purification in air handling systems. AtmosAir™ Solutions is the leading manufacturer of air purification using bipolar ionization technology.



## The Indoor Air Quality Solution

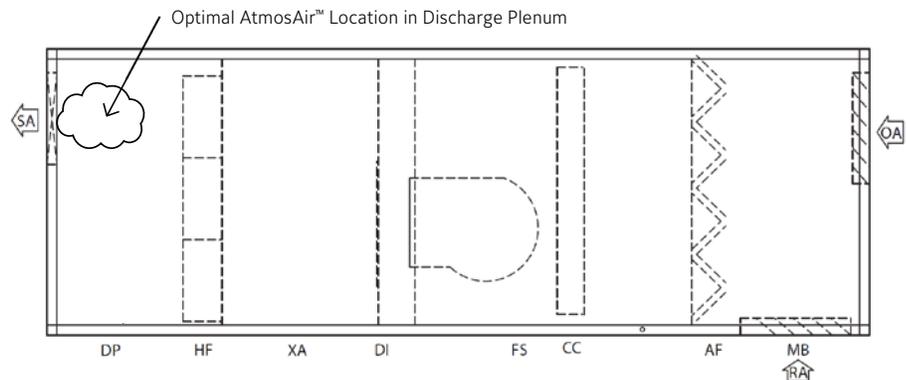
We spend up to 90% of our time indoors, which is why the U.S. Environmental Protection Agency has named indoor air quality one of the top 5 health threats. Bipolar ionization technology from AtmosAir™ contributes to better health by restoring indoor air to its natural state without pollution or contaminants. AtmosAir™ has been used effectively in a variety of applications, including:

- Healthcare facilities
- Airports
- Commercial office spaces
- Schools
- Sports environments
- Museums
- Casinos



## Application and Placement

The AtmosAir™ bipolar ionization system is intended to be mounted in the discharge plenum of an air handler, operating only when airflow is present. Thus, power to the ionization unit should be interlocked with fan operation or controlled via an air pressure switch. The size and number of recommended systems is dependent upon the airflow, the size of the space and the severity of pollution and odors. The level of ionization is adjustable.



## Quantity and Selection

AtmosAir™ offers two models designed for use in YORK® air handling systems: model 500FC, which has 5 tubes and model 508FC, which has 8 tubes. Depending on the indoor air quality in the facility and the supply CFM required, your unit will be equipped with one or both AtmosAir™ models in single or multiple quantities. Indoor air quality is determined by referencing the table at right. Our Application Engineering team has a tool that will determine the correct quantity of AtmosAir™ models based on your air quality selection and CFM requirements. This tool also generates the data to build-out a fully defined bill of materials.

## YORKWorks Indoor Air Quality Level Selection Table

ASHRAE 62.1 Indoor Air Quality Class	AtmosAir™ Indoor Air Quality Level	Building Description
I	A	Residences, Airports, Office Spaces, Schools/Classrooms, Day Care Centers
II	B	Nursing Homes, Locker Rooms, Manufacturing, Food Processing, Restaurants
III	C	Beauty Salons, Casinos, Waste Water Applications, Industrial Facilities, Garbage Rooms, Kennels
IV	NA	Exhaust to outdoors



## Continuous Disinfection

Microbiological agents exist all around us, some of which are too small to see. When not kept in check, these organisms can cultivate, populate and be transmitted throughout a facility. This can cause unwanted odors, illness and allergy symptoms. For this guide, we will focus on viruses, bacteria and fungi (mold) – these are all challenges within an indoor air handling unit.

## Real-Time Measurement and Verification

AtmosAir™ has ancillary options including AtmosAware™ sensors that monitor, track and report on six parameters of indoor air quality, including temperature, relative humidity, CO<sub>2</sub>, PM2.5 (particulates), VOCs and air quality.

## AtmosAir™ Bipolar Ionization Has Been Tested Against:

- Clostridium difficile
- Bacteriophage MS2 (norovirus surrogate)
- Escherichia coli (E. coli)
- Staphylococcus saprophyticus (Staph/MRSA)
- Cladosporium (black mold, mildew)
- Penicillium/Aspergillus
- Coliform bacteria
- Bacillus subtilis
- H1N1 influenza virus (Swine flu)
- Coronavirus
- H5N1 avian influenza virus (Bird flu)
- Airborne allergens
- Ultrafine particles

## Maintenance, Power and Control

AtmosAir™ systems come with composite BPI tubes that should be replaced every two years. AtmosAir™ is installed in the air handling unit and can be connected to a building management system for monitoring. Minimal power is consumed by AtmosAir™ systems, with both the model 500FC and model 508FC having a draw of just 0.6 to 1.0 amps. In a system up to 50,000 CFM, no more than 6 amps would be drawn at 115 volts.

# Frequently Asked Questions

## **How does AtmosAir™ reduce particulate matter?**

Many small particles that are generated within a space never get to system filters, increasing the chance of illness and respiratory distress. The AtmosAir™ bipolar ionization process helps more of these particles be removed from the air we breathe. Oppositely charged AtmosAir™ bipolar air ions cause particles to attract to other particles and become bigger and heavier. These larger particles can be trapped by HVAC system filters more easily, so the filters operate more efficiently – and effectively.

## **How does AtmosAir™ reduce Volatile Organic Compounds (VOCs)?**

Bipolar ions generated by the AtmosAir™ system surround the VOCs and break down hydrocarbon chains, reducing these complex compounds into immeasurable levels of carbon dioxide and water.

## **How does AtmosAir™ work against various bacteria, viruses and germs?**

Positive and negative ions surround the surface proteins that form on organisms and trigger infections (hemagglutinin), changing them into highly reactive OH groups called hydroxyl radicals. These take a hydrogen molecule from the hemagglutinin and change it into water. The ions destroy the virus surface structure on a molecular level, rendering it incapable of causing infection even if it enters the body.

## **Does AtmosAir™ have a device that measures ion levels?**

Yes. There is a specially designed ion meter that reports ion levels.

## **Does the ionization system increase the oxygen content in the air?**

No. The ionization technology increases the number of oxygen ions, not the number of oxygen molecules.

## **How do I know my AtmosAir™ system is working properly?**

First, perform a local check and ensure that the green light on the front of your ionization unit is illuminated. If the green light is not on, have the system serviced by Johnson Controls. If the green light is on, but you do not feel the air is being cleaned sufficiently, you can turn the ionization control knob up until you are satisfied with the air quality. If your ionization tubes have not been replaced within the last 24 months, you should contact Johnson Controls to have the tubes replaced.

## **How often should the AtmosAir™ ionization tubes be changed?**

AtmosAir™ composite tubes will degrade and become ineffective after approximately 17,600 hours (two years) of use.

## **Is it dangerous to look at the ionization tubes while they are operating?**

No. Unlike UV lamps, which can harm your eyes, there is no danger in looking at a powered ionization tube.

## **Is touching the ionization tubes dangerous?**

Yes. If the ionization unit is powered and you touch the tubes, you could be injured. Therefore, before touching the tubes or removing them for replacement, make sure the power to the system is off by unplugging it from the power source.

## **Can the AtmosAir™ unit be used in both indoor and outdoor air handling systems?**

Yes. AtmosAir™ has tested their units in both indoor and outdoor applications.

## **What is the maximum temperature range to which the ionization tubes can be subjected?**

The tubes should not be subjected to temperatures below 0° Fahrenheit or above 150° Fahrenheit.

## **What is the warranty of my system?**

AtmosAir™ warrants the system for two calendar years from shipment date.

## **Are bipolar ionization units effective in 100% outside air units?**

AtmosAir™ systems are equally effective whether the air system is 100% outside air and exhaust air, or 100% re-circulated air, or a combination.

## **Does AtmosAir™ bipolar ionization take the place of media filters?**

No. AtmosAir™ bipolar ionization is an air conditioning component that works in conjunction with mechanical filtration and is not intended to replace components such as filters, etc.



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