



Environmental Sensing Solutions for Air Handling Units (AHUs)



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Introduction

This air handling unit white paper is the first in a series that will explore how Veris Industries products can be used to monitor and regulate heating, ventilation, and air conditioning (HVAC) applications.

An air handler, or air handling unit (often abbreviated to AHU), is a device used to condition and circulate air as part of a commercial or industrial HVAC system. Usually, an air handler is a large metal box containing a blower, heating and/or cooling elements, filter racks or chambers, sound attenuators, and dampers. Air handlers usually connect to duct work that distributes the conditioned air through the building, and returns it to the AHU. Sometimes AHUs discharge (supply) and admit (return) air directly to and from the space served, without ductwork.

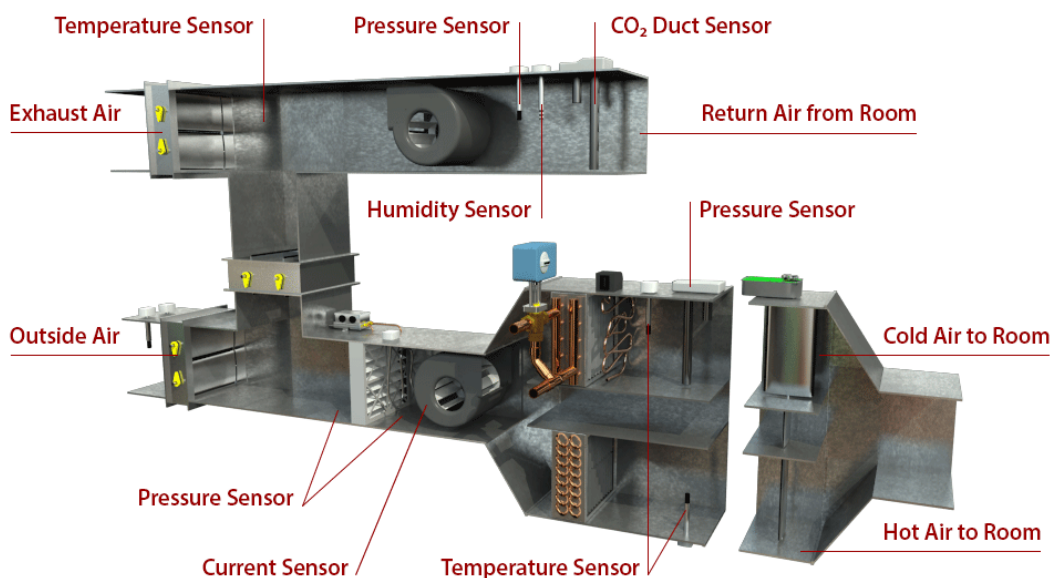
The number and types of AHUs used vary based on the size of the building and how the building is used. For example, in a hospital or lab environment multiple AHUs may be needed to isolate rooms and



Air Handling Unit
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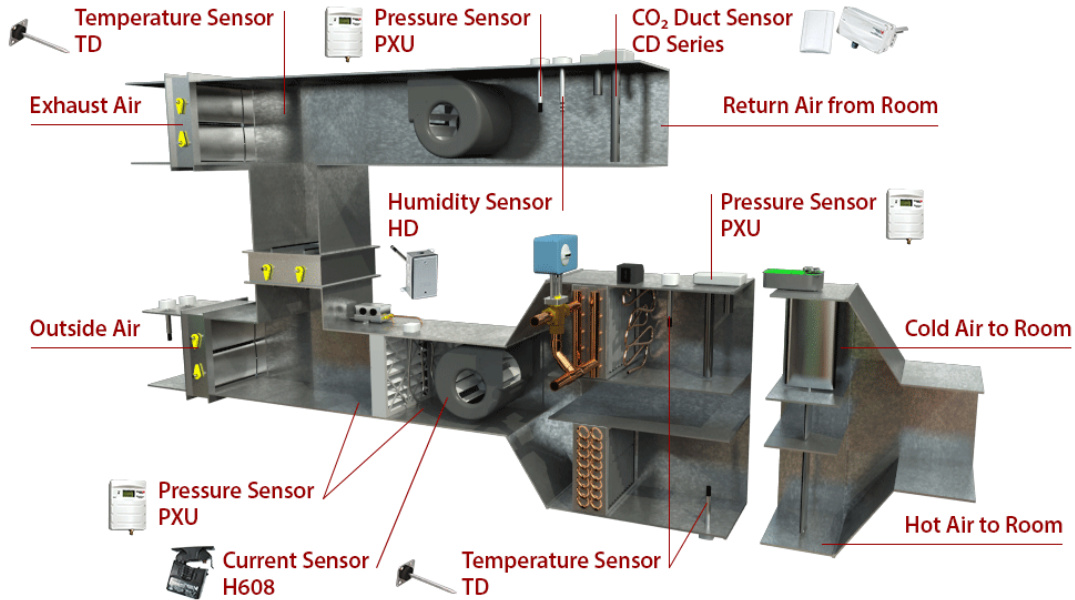
prevent cross contamination. Air handlers also dehumidify or humidify air; regulate the mix of outside and recirculated air; and help control pressurization inside a building.

Inside an AHU



The information provided herein is intended to supplement the knowledge required of an electrician trained in high voltage installations. There is no intent to foresee all possible variables in individual situations, nor to provide training needed to perform these tasks. The installer is ultimately responsible for ensuring that a particular installation remains safe and operable under the specific conditions encountered.

Where and How Veris Products Fit in an AHU




Product family	Why it is used on an AHU
Pressure (PX, PXU)	Monitors supply and return duct pressure. Can be used to monitor filter status. Provides a control point for fan speed and air flow through duct work. Can also be used to provide building zone pressure (negative or positive) to either prevent or allow the inflow of outside air.
Humidity (HD)	Used to monitor duct, space and outdoor RH – mostly for building comfort. Provides input to determine how much outside air should be introduced into the building. Some manufacturing and lab processes require controlled humidity.
Temperature (TD)	Monitors return and supply duct temperature. Control point for air recirculation versus introduction of outside air. Provides input for environment comfort – fan control.

Product family	Why it is used on an AHU
Current Sensors (H608)	Monitors run status of fan motors – fan status, on/off, belt loss, etc. Provides proof of airflow – if the fan is running, air is moving.
Carbon Dioxide (CO ₂) (CD)	Monitors carbon dioxide for Demand Control Ventilation (DCV). Monitoring CO ₂ levels for demand control allows the end user to only bring in fresh air when needed. It costs money and requires more energy to condition outside air versus recirculating the existing conditioned air in a building.

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