

Simplex® XAD Remote Air-Sampling Smoke Detection System

**An efficient, effective solution for HVAC ducts
and other areas that are difficult to access**

Product Benefits:

- Active air sampling techniques are combined with analog smoke sensing technology
- Excellent fire protection and easy maintenance access for HVAC duct detectors and detectors mounted in other difficult-to-access areas
- Monitors airflow in HVAC ducts
- Ideal for restricted access/harsh environment areas
- Centralized, convenient maintenance

The Simplex XAD Air-Sampling Smoke Detector is an excellent solution for challenging duct applications, as well as restricted areas such as prison cells and the top of elevator shafts when smoke detection is required by code. The system utilizes Simplex TrueAlarm® sensing technology, together with a high-performance aspirator and configurable flow monitoring circuitry. It is well suited for use in traditionally difficult to access HVAC ducts in commercial properties, institutional settings and industrial sites.

Duct Smoke Detection

In a fire event, ventilation duct systems can carry smoke and toxic gases from one area of the building to another. Duct systems may also supply air to a fire, fueling its growth. System designers must meet the challenge of developing solutions that effectively detect and control smoke and airflow through the use of devices such as duct smoke detectors and smoke dampers.

While smoke detection within ducts does not replace open-area smoke detection, it does provide greater control over the flow of smoke from one area to another. If smoke is detected within a duct, that duct can be closed and the corresponding HVAC unit shut down to prevent further spread of smoke, helping to protect life and property, and avoid business disruption.

Detection Challenges

Smoke sensors placed in HVAC ducts can determine if smoke is present near a protected area as air travels through the duct. However, the location of HVAC ducts themselves can create challenges for system designers and become a nuisance to end users. Traditional duct detectors mounted directly to the duct are sometimes installed in difficult-to-reach areas that occasionally require the use of lifts to perform service. This can be a costly and as a result, duct detection devices may not be serviced on a timely basis, which can cause nuisance alarms and disruption of business services. In some cases, the occurrence of nuisance alarms may cause the device to go out of service, compromising the effectiveness of the life-safety system.

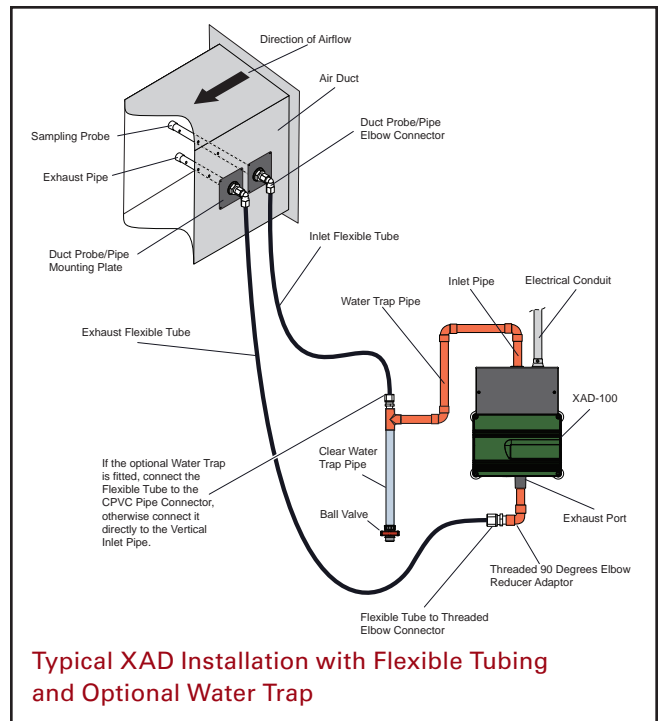
Solution: Simplex XAD Duct Detector

Utilizing a high-performance aspirator and configurable flow monitoring circuitry, the Simplex XAD detector can actively draw air from a difficult-to-reach HVAC duct up to 82 feet (25 m) away, allowing easy access for service. The sampled air is filtered before being analyzed by a Simplex TrueAlarm smoke sensor that is incorporated into the system. Air flow level is displayed on a ten-element bar graph that can be adjusted for high and low flow thresholds, and flow failure is reported as a device trouble via digital communication to the fire alarm control panel.

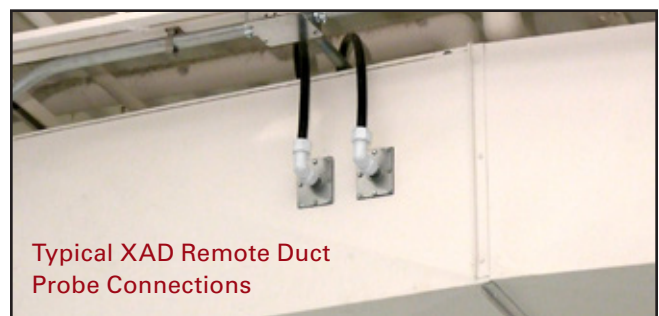
Unlike other duct detectors, flexible tubes can be used for installing the Simplex XAD duct detector in places where conventional CPVC pipes cannot be installed easily. In a duct application, two flexible tubes are installed. The inlet tube is used to sample air from the duct and the second tube exhausts the air back into the duct.

When using the Simplex XAD Air-Sampling smoke detection system, the detection device can be mounted outside the protected area and accessed without the use of lifts or ladders, bringing tangible cost savings to end users.

As the service for the Simplex XAD detector can be performed from floor level, it is well suited for applications where duct detectors are difficult to maintain and service, where an aerial lift device must be used to service duct detectors and where unobtrusive smoke detection is required. In addition to duct applications, the XAD remote detection system can be applied in other challenging protection areas. This includes the top of elevator shafts, prison cells, and MRI rooms, where conventional detectors can be hard to access and maintain or where the device can be adversely affected by the environment of the area it is protecting.



User Function Buttons and Status Display



Typical XAD Remote Duct Probe Connections