

To: Users of System Sensor duct smoke detectors
From: Systems Application Engineers
Subject: Questions concerning the installation of duct smoke detectors

Q: Can a System Sensor duct mounted smoke detector be installed vertically, on top of the duct, or within the duct?

A: Yes, but only if the following provisions are met. System Sensor recommends the verification of pressure differential between the sampling and exhaust tube be the determining factor. The pressure differential must be within specified limits of .0015 to 1.20 inches/water for photoelectronic smoke detectors. The detector housing cover must be securely fastened to complete the airtight enclosure for proper air sampling and to restrict contaminants from entering the detector head. A smoke test should be performed as required by the NFPA (National Fire Protection Association) 72, Chapter 10.4.2.2 (g4), 2002 edition.

Please note the operating temperature ranges from 32 degrees Fahrenheit to 120 degrees Fahrenheit maximum and a relative humidity range of 10% to 93%. Insure that the end cap is installed in the inlet sampling tube and that sampling holes outside of the duct, if any, are sealed.

With regard to the location of the duct mounted smoke detector, please note NFPA 72, Section A.5.14.5.2, which states in part: In order to obtain a representative sample, stratification and dead air space should be avoided. Such conditions could be caused by return duct openings, sharp turns, or connections, as well as by long, uninterrupted straight runs. For this reason, duct smoke detectors should be located in the zone between 6 and 10 duct-equivalent diameters of straight, uninterrupted run. In return air systems, the requirements of 5.14.4.2.2 take precedence over these considerations.

Q: Can these detectors be installed underneath the duct?

A: They can, but it is not recommended due to condensation that may drain into the electronic circuitry and cause electrical damage.

As always, contact the local Authority Having Jurisdiction prior to installing detectors.

If you have any questions concerning System Sensor products or their application, please contact Technical Services at 1-800-SENSOR2 (736-7672), extension 2.