

Overheat and Fire Detection in Aircraft Hangars

SPECIAL HAZARD APPLICATION

Aircraft hangars present special fire protection problems due entirely to the nature of their contents. State-of-the-art high value aircraft, with expensive electronics and large fuel loads, present new challenges for fast reliable fire detection and suppression systems. Protectowire Linear Heat Detector and FireSystem control panels, provide an effective solution for the risks associated with this unique hazard.

It is generally accepted that the highest risk of fire in hangars occurs when an aircraft is undergoing repair and maintenance, or from fuel storage and handling. Since it is impractical to remove all fuel from an aircraft prior to moving it to a hangar, the presence of flammable aviation fuel is a constant danger. In most cases, today's aircraft are more valuable than the hangars that house them. With greater emphasis being placed on providing increased fire protection for the aircraft, as well as the hangar structure itself, it is now common practice to utilize foam-water deluge sprinkler systems which incorporate oscillating foam monitor nozzles, intended to protect the shadow area beneath the aircraft wings.



Protectowire Linear Heat Detection Systems may be used to activate these foam-water deluge systems, as well as other types of extinguishing systems, such as preaction sprinklers. Protectowire FireSystem controls eliminate the need for multiple control panels and ensure complete system integration and reliability. These panels are also capable of operating fast response optical flame detectors as part of a supplementary protection system designed to cover specified floor areas beneath the aircraft being protected.

Since Protectowire is a linear detector, all points along its length are detection points. When properly installed at the hangar roof level, this provides significant savings in both labor and materials compared to other types of spot detectors, because it is not necessary to install electrical boxes and conduit throughout the protected area. In addition, unlike rate-of-rise or analog type detectors, Protectowire's actuation temperature remains constant throughout its approved installation range and it is not adversely affected by temperature fluctuations which may occur when the hangar doors are opened and closed or high recovery-rate heating systems are operating.

Floor accessible zone boxes and end of line boxes allow for testing ease without the need for an aerial lift. NFPA 72 test requirements for non-restorable line type detectors: "Test mechanically and electrically for function. Measure and record loop resistance. Investigate changes from acceptance tests." Conversely, each spot rate-of-rise type device is required to be heat tested. This is quite a time consuming and expensive task given the high ceiling levels.

Protectowire features are designed to provide the most reliable and cost-effective detection system available for today's high value aircraft hangar applications. They include reduced detector installation costs and modular FireSystem control panels with multiple hazard extinguishing release capabilities. Protectowire Linear Heat Detector is a component of a complete family of fire detection systems manufactured by The Protectowire Company.

