



Fire Protection in Warehousing Facilities

The Challenge

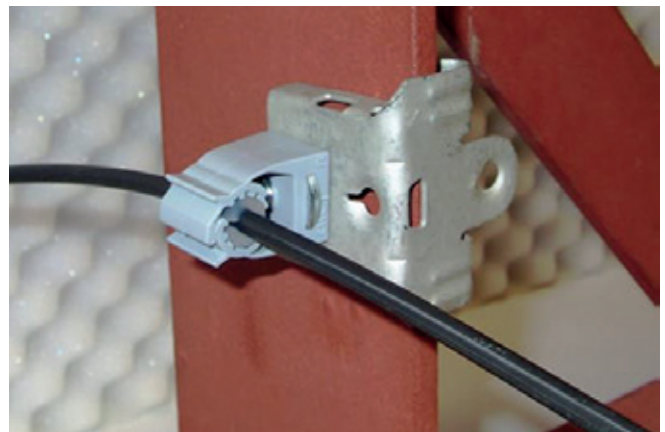
Warehouse facilities require a reliable and quick fire detection system to protect stock, equipment, personnel and visitors from fire incidents. These events come at an enormous cost: loss of stored goods, interrupted operations, downtime and reputational damage.

Warehouses pose a unique challenge for fire detection, as stored goods may be flammable and other sources of ignition within the warehouse are readily available including packing materials, electrical equipment, lighting and HVAC equipment. Another consideration when selecting a fire detection system is building structure and height. Smoke detectors often have issues with smoke stratification, and beam detectors are expensive to maintain and require many beams. Image-based detection methods cannot achieve line-of-sight detection while avoiding blind spots within shelving and pallet storage.

Traditional fire detection involves installing multiple sensors at different locations throughout a storage facility that is densely packed with shelves and pallets. This is not efficient or effective, as fires can grow and spread quickly within the facilities in the time it takes for a sensor to locate a fire and activate extinguishing systems. Harsh and dusty environments such as

industrial warehouses also effect the performance and maintenance requirements of traditional fire detection systems.

A warehouse environment needs a system that not only provides fire detection coverage and early warning of heat build-up, but also one that delivers information for fire management activities and precisely pinpoints the position of the fire. AP Sensing's fiber optic Linear Heat Detection (LHD) solution provides all of these capabilities in a system that is low maintenance and extremely reliable.



Sensor cable and mounting accessories

The Innovation

The AP Sensing LHD solution utilizes a passive fiber optic cable as a distributed temperature sensor - measuring thousands of temperature points in real time. The sensor cables used for warehouse monitoring are lightweight and easy to install, even in a big warehouse facility with multiple racks and storage systems. The cable is rugged, resistant to environmental conditions and requires minimal maintenance.

Fiber optic LHD is advantageous for warehouse facilities because the cable can be configured to any shelving system, fitted along storage racks and between storage levels to achieve multi-level coverage. It provides the benefit of much faster and earlier alarming, as the sensor is closer to potential heat sources.

Alongside the multi-level coverage, AP Sensing's LHD system provides a unique and flexible alarm zoning concept, which enables individual zones with different alarm criteria (sensitivities) along the same sensor cable run. Due to the precision of the zones and adaptive alarm parameters, our system also has the industry's lowest false alarm rate.

Fast & Reliable Detection

The AP Sensing LHD solution consists of a fiber optic sensor cable and a fully-tested control instrument that measures a complete temperature profile within seconds. All information is available through dry contacts and high level communication e.g. Modbus protocol. This solution can also be integrated with FACP and SCADA/BMS or our comprehensive asset visualization software, SmartVision. With SmartVision, the warehouse configuration and all system information is presented visually.

Our LHD is thoroughly tested, with the most complete set of certifications on the market (VdS, UL, FM, ATEX, IECEx, SIL) and a 35-year MTBF. It is robust and has passed highly demanding type tests. The sensor cables are proofed against IEC 60331-25 for high temperatures, ensuring the system can withstand severe conditions and the demands of fire monitoring.

The system can be configured redundantly so that the need for periodic testing or a cable break does not affect system operations. In the case of a break, the cable is easily spliced and repaired. Testing AP Sensing's LHD system is simple, time-saving and doesn't hinder regular operations.



Why AP Sensing?

- Wide temperature range (-40 to 85°C) for freezer warehousing to tropical conditions.
- Temperature measurement up to 750°C for 2 hours, tested as per IEC 60331-25.
- Industry-leading Linear Heat Detection (LHD) technology with fast response times, excellent accuracy and low maintenance.
- All product variations are fully certified and in compliance with internationally recognized standards.
- Our experience and proven deployment in all regions in the world – our project reference list is extensive and comprehensive.
- Range of certified sensor cables to fit every need and comprehensive.
- Easy system integration through flexible protocols and interfaces.
- World-class service, support and training.



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