APSENSING.

# Monitoring of Food Processing Plants

## The Challenge

Thousands of food processing plants are key to the grocery supply chain and such organisations have state- of-the-art activities in livestock agriculture, production, packing, storage and marketing at an industrial scale, employing thousands of workers.

A fire in these plants is devastating to productivity, as product manufacturing is suspended during and after a fire, and the future of the workforce remains uncertain during reconstruction work, which is typically around two years.

Additionally, food traceability (documenting and linking the production, processing and distribution chain of food products and ingredients) presents unique challenges for food processing plants and can include production parameters such as temperature. Receiving temperature data from the plant helps to adjust production temperatures and increase energy efficiency.

When considering an effective fire protection system as well as comprehensive batch tracing in the different stages of food processing, the following challenges must be considered:

- Humidity and condensation
- Salinity and acidity
- High and low temperature areas and temperature fluctuations
- Hygiene, cleaning and/or disinfection requirements
- Pressurized cleaning requirements via use of hot water and chemical agents

## The Innovation

Some clients experience false alarms and maintenance issues with standard fire detection systems, such as smoke detectors and smoke aspiration systems. Therefore, fiber optic Linear Heat Detection (LHD) is becoming increasingly popular in the food industry. This technology utilizes Distributed Temperature Sensing (DTS) technology and a single, robust fiber optic cable acts as a temperature sensor fitted to all required locations in the plant to act as a continuous fire detector.

AP Sensing's LHD has the ability to measure two temperature profiles with different configurations simultaneously using one sensor cable. This allows for very precise and fast fire detection as well as the measurement of accurate temperature profiles for the temperature control and monitoring of different areas (e.g. oven lines, deep fryers, cooling tunnels or cold rooms) to provide valuable temperature data for batch tracking and production control.

The smooth sheathing of the sensor cable fulfills high hygienic requirements, and by relying on temperature detection alone, the system is immune to condensation, dirt, and chemical agents. Additionally, each processing area can be programmed with customized alarm schemes that eliminate false alarms.

AP Sensing's LHD technology is certified for use in explosive atmospheres (ATEX & IECEx) and complies to international fire safety directives without requiring special housing, which simplifies installation and maintenance. Additionally, our technology is low maintenance, with a long life (35-year MTBF) and simple, annual maintenance. It provides an accurate, efficient, reliable and long lasting fire protection solution for the food industry.

## Adaptable & Informative

AP Sensing and our many regional partners have extensive experience in various food processing industries, with global installations across multiple reference sites. Multiple LHD units with different range and channel configurations have been installed to modularly implement fire detection at various food processing plants. A typical LHD temperature profile shows temperatures at inward livestock handling areas, different processing areas throughout the plant, and of refrigerated and freezer storage areas. Only LHD technology is capable of meeting the challenges and maintained reliability of this project.

Our certified sensor cable is typically fitted using cable clamps to ensure it is adequately supported as it is routed throughout the different locations of the plant. For the freezer storage area, the sensor cable can be fitted during plant maintenance to provide a more comfortable environment for the installation technician.

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**Passion for Plants.**
For every unit sold, AP Sensing plants 100 trees.

## Why AP Sensing?

- AP Sensing is the leader in fiber optic LHD.
- Fully certified and in compliance with internationally recognized standards including IT Security standards.
- Continuous spatial measurement of temperatures in real time allows the detection of overheating with pinpoint precision.
- Two systems in one provide fast fire detection as well as reliable temperature data for batch tracking and production control along the process chain.
- Defined configuration of alarm parameters and alarm zones allows for flexible adaptation to ensure fast and reliable detection.
- Proven deployment in all regions in the world – with more than 600 customers in 70 countries.

- World-class service, support, and training from AP Sensing's regional offices.
- Engineered & Made in Germany.

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