

Linear Heat Detection (LHD) installation for A Food Processing Plant



The Scenario

For this project the user is a Netherlands-based leading vegan food company offering a portfolio of revolutionary plant-based food products. The company is extremely innovative and creates the products using proprietary scientific processes. Research, development and innovation are core elements of their business strategy.

From a fire detection perspective, the environment within the plant was very challenging. With high levels of humidity and particulates, it was not possible to utilise conventional heat and smoke detection technology as their failure rate is too high in these environments.

Client Requirements

The client was looking for established, reliable, state-of-the-art technology that could operate in their challenging environment. They had already considered other linear heat detection technologies such as electronic multipoint linear heat detection systems.

The client chose FireLaser as their solution due to the ease of installation across multiple rooms. The robust nature of the fiber optic cable and cleaning possibilities alongside the ability to detect fires in their challenging environment made it the ideal solution.

What Did We Do?

SenseTek worked with Bandweaver's FireLaser fiber optic LHD system to meet the client's requirements and provide full coverage protection for the plant. SenseTek installed a 4-channel FireLaser LHD with a 2km range. The system was configured into 2 loops of 570 and 660 metres and split into 29 defined zones.

The FireLaser system was mounted in a 19-inch wall mount cabinet within the technical room and was integrated with the building's complete fire system. This included smoke detectors, slow whoops, call points, flashers etc. – all connected to the main fire panel.

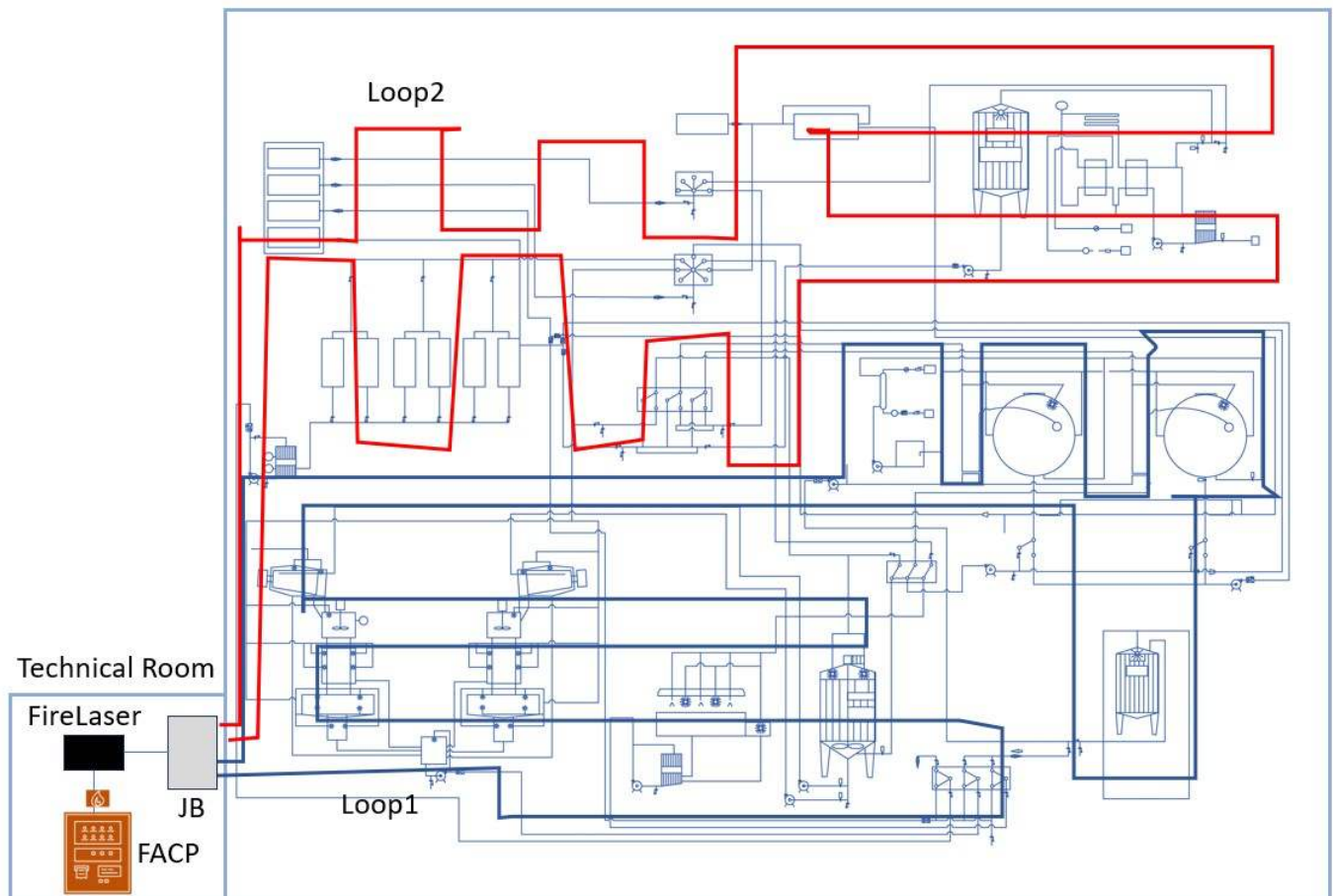


Figure 1. Schematic of the installation

Robustness of System

Unlike conventional smoke detection systems, fiber optic linear heat detection systems are not affected by particulates in the air – which make it ideal for a food processing environment. They also have no vents, orifices or moving parts and so do not require any ongoing cleaning or maintenance programs which is again essential in an environment where hygiene is of utmost importance.

The systems can be configured in multiple zones according to the operators' requirements. The zones are configured in the software and so there is maximum flexibility. Each zone can be programmed individually using smart alarms which can be configured according to the environment of that zone meaning false alarms can be kept to a minimum.



Figure 2. Example FireLaser system installed by SenseTek

Benefits To the Client

The Bandweaver system complied with the operator's high specification requirements. Some of the key following benefits and advantages to the end user include:

- **Early detection of even a small fire:** Bandweaver LHD systems are approved to operate with a measurement time of 5 seconds which is considerably quicker than the alternatives. With the smart alarms (including rate of rise and deviation alarms), the system can detect fires at a very early level without risk of false alarms. This is evidenced by the fact that the FireLaser can pass the fire pan test to even the strictest requirements.
- **Complete Coverage:** The distributed nature of the fiber optic system provides measurements every 1m along the length of the cable providing complete and continuous coverage with no blind spots or gaps in the protection.
- **Reliable and robust system:** The system was configured in a loop configuration which means that there is a level of redundancy even if the cable is damaged. Also, it is not affected by any dust, particulates, or moisture in the air. For example, the electrically based system is affected adversely by moisture.



About Bandweaver Technologies

With an installed base of over 60,000km and 8,000 systems installed worldwide, Bandweaver's vision is to be the first choice for integrated distributed fiber optic sensing solutions across the globe. Since 2002, Bandweaver has been committed to delivering reliable, innovative, client-centric, and value-added products and services, via a dedicated and talented team of people.

Bandweaver manufactures and distributes advanced fiber optic monitoring sensors and integrated technologies, enabling customers to monitor, secure and keep personnel and critical assets safe.

With quality and excellence as fundamental elements of Bandweaver's portfolio, the business is continuously developing its range of technologies, including Distributed Temperature Sensors (DTS), Distributed Acoustic Sensors (DAS) and integrated smart intelligent software solutions. Bandweaver provides solutions for Security, Fire, Power, and Pipelines.

For further information please contact our global team at info@bandweaver.com

About SenseTek Fire & Security Solutions

SenseTek is the specialist in the field of special fire detection. Where the possibilities of regular detection systems end, the possibilities of our systems begin. This means that even in an environment where conditions are different to extreme (dust, extreme temperatures, smoke, air movement), we can provide some form of fire detection.

SenseTek offers a wide variety of detection systems, for practically every environment. As a distributor for world leading companies like Carrier, Bandweaver, Detectortesters and Elmdene. SenseTek does not just deliver. Our highly experienced employees can support you from project intake to the commissioning of your fire detection installation. Assistance is the starting point of our services.

In addition to the work for the delivery, we can also carry out maintenance on the installations together with you. Our goal is to show the employees that they will be able to carry out the maintenance independently in the future. We are also able to assist you with malfunctions or trouble shooting at the site.

Feel free to call or email us (or drop by for a cup of coffee if you are in Amsterdam) to find out more about what SenseTek Fire & Security Solutions can do for you info@sensetek.nl