A complete fire detection solution.

Fire Detection and integration into food processing systems is pertinent to the continual operation and protection of both the product and machinery.

Food products being transported at high temperatures have the potential risk of fire and can cause disruption to the food handling process. This can be costly in loss of product, down time and damage to machinery.

Patol Ltd have developed Fire Detection solutions for the food industry. These include:

- High Temperature Transit Flame Sensor
- Transit Heat Sensor
- Linear Heat Detection Cable (LHDC)

High Temperature Transit Flame Sensor

The flammable nature of high temperature food product being transported on conveyor systems has the potential to ignite.

The Patol 5712 High Temperature Transit Flame Sensor monitors high temperature materials up to 240° on highest sensitivity and triggers as the material reaches the ember or flame condition.

The sensor employs enhanced infra-red monitoring technology that analyses the levels of IR emission in the narrow band of 4.2-4.7µm. As the sensor is tuned to this band it is “solar blind” meaning the “background” and “transient” IR spectra are discriminated. This provides enhanced false alarm immunity.

The 5712 Sensor is located above the conveyor and monitors the food product as it leaves a fryer, oven, dryer or other equipment which elevates the temperature of the product increasing the potential for fire.

Air purging from a compressed air feed is used to maintain a positive air pressure in conjunction with an air knife to prevent dust settling on the sensor window. The air supply is monitored by a pressure switch which on air failure is signalled as a fault status.

The 5020 controller is directly connected to the sensor. A series of user programmable DIL switches allows option selection including detector sensitivity settings, auto/manual reset sequence selection and single / coincidence voting from the four individual internal detection channels for the alarm trip and shutdown outputs.

IR Transit Heat Sensor

Infra-red emissions occur for all materials. The wave length spectrum and intensity of this IR depends temperature of the material, and for solid bodies is determined by the Laws of Physics formulated by Planck, Stefan, Boltzman and Wien.

Planck’s Law defines the spectrum and level of IR emissions for a ‘black body’ at any given temperature.

Patol’s Infra-Red Transit Heat Sensor employs IR filters that select longer wavelengths and are “blind” to the visible spectrum. They can detect both high energy emissions from very hot / glowing embers, and those from abnormal but relatively low temperature product transiting the monitored conveyor.

Linear Heat Detection Cable (LHDC)

A mechanical fault can cause a build up in heat which can be sufficient to ignite a part of the machinery.

A Grain Dryer is one application where a build up of husk can ignite, causing a fire and loss of product.

The Patol Linear Heat Detection Cable (LHDC) is designed to provide early detection of Fire conditions and overheating in circumstances where other forms of detection would not be viable. Extensive single zonal lengths of the LHDC Digital may be installed with the ability to trigger alarms for hot spots occurring on very small sections of the overall cable. The LHDC may be employed in a wide variety of applications but is particularly suited where there are harsh environmental conditions.

Contact Details:

Patol Limited
Archway House
Bath Road
Padworth, Reading,
Berkshire
RG7 5HR
Tel: +44 (0)1189 701 701
Fax: +44 (0)1189 701 700
Email: info@patol.co.uk
Web: www.Patol.co.uk