Model 5730
High Temp Transit Flame Sensor

The 5730 High Temperature Transit Flame Sensor monitors high temperature materials (up to 240° on highest sensitivity), being transported on conveyor systems at speeds of between 0.5 and 6m/s, and triggers as the material reaches the ember or flame condition.

The sensor employs enhanced infra-red monitoring technology that analyzes 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.

Air purging from a mains operated Air Purged Blower (APB) air feed is used to maintain a positive air pressure in the sensor enclosure, and ensures the prevention of 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 5730 incorporates within the unit a series of user programmable DIL switches. 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.

The sensor air pressure and signal cable connections are fault monitored and fail safe. The controller incorporates an auxiliary fault input and common fault output contact.

Features

- Detection of ember and flame of high temperature product.
- Air purged system for dusty environments with air pressure monitoring.
- Four Channels of isolated Detectors for maximum reliability.
- Single / Coincidence voting output
- Timed auto reset / coincidence analyser circuit
- Tuned response — solar blind
- Voting Logic & Latching options
- Alarm & Trip Functions
- Fault Monitored, with Test & Reset push Buttons
- Field Programmable
- Local Indicators

Applications

- Food Processing
- Tobacco Processing
- Conveyors
- Escalators
- Baggage Handling
- Radio Frequency Drying Systems
- Microwave Drying Systems
- Waste Drying Systems
- Drying Conveyors
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Standard / Low Power Mode

The unit can be used in two principle operating modes. Either relay mode, with its own 24 Vdc power supply or in low power mode (as shown below), see datasheet for further details.

The sensor is located above or beside the materials transit path (conveyor, roadway, etc.) by means of the adjustable mounting bracket and aligned such that the monitored hazard passes through the sensor’s field of view. The distance and angle of the sensor determine the width of the monitored path.

The table below shows the width of the monitored product at the Lowest and Highest sensitivity settings. This is based on the sensor being installed at a 45° angle.

Exact response is dependant on the emissivity factor of the monitored material, sensor orientation and target speed.

<table>
<thead>
<tr>
<th>Sensor mounted 1m above Conveyor at 45° angle</th>
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<tbody>
<tr>
<td>Sensitivity Level</td>
</tr>
<tr>
<td>Lowest</td>
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<tr>
<td>Highest</td>
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</tbody>
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This document is only intended to be a guideline and is not applicable to all situations.

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