

# 5000 Series: Model 5610

## Infra-Red Transit Heat Sensor

IECEX and ATEX Approved



The 5000 Series is an early warning infra-red heat sensor, which can trigger at temperatures as low as 100°C, when monitoring materials being transported on conveyor systems, before they have reached the ember or flame condition.

Its unique dual detector enhanced Infra-red monitoring has been created to detect black heat. Black body emissions occur for all material, the sensor is designed to detect a change in these emissions even at relatively low temperatures, when the material moves through its field of view.

The 5610 is specifically designed for hazardous areas and is IECEx / ATEX approved for Zones 1, 2 & 21, 22.

Air purging from a compressed air feed is used to maintain a lens cleaning system that ensures the prevention of dust settling on the sensor window.

The 5610 incorporates within the unit a user programmable SIL switch. Option selection includes detector sensitivity settings, auto/manual reset sequence selection and single / coincidence voting from the two individual internal detectors for the alarm trip shutdown outputs.

## Features

Detection of hazards at temperatures below flame point including both embers and buried hot spots.

IECEX & ATEX approved

Twin high integrity detection circuit channels for maximum reliability

Two wire operation - Can be powered by direct connection to standard fire trigger circuits or addressable loop interface.

Single / Coincidence voting output

Timed auto reset / coincidence analyser circuit

Tuned response — solar blind

Volt free relay contact output operation selectable as standard

Fault Monitored, with Test & Reset push Buttons

Field Programmable

Marking: **Ex II2 G Ex d IIC T5 Gb**

**Ex II2 D Ex tb IIIC T95°C Db**

## Applications

Conveyors

Biomass

Drying Lines

Waste Recycling Conveyors

Food Processing

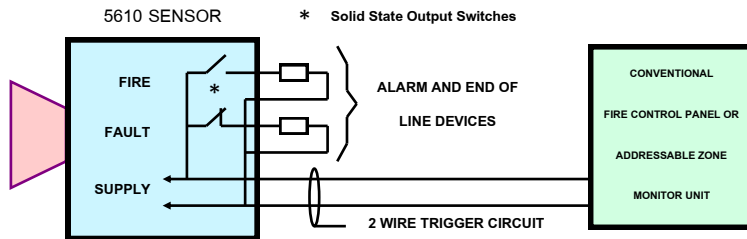
Production Lines

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### Standard / Low Power Mode

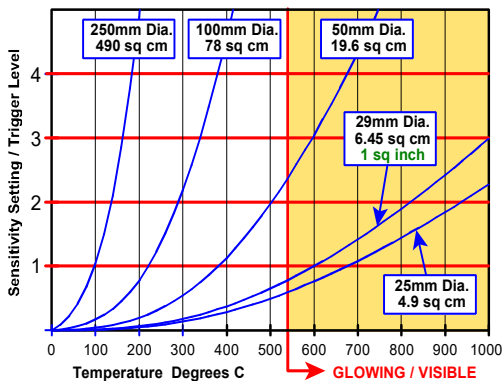
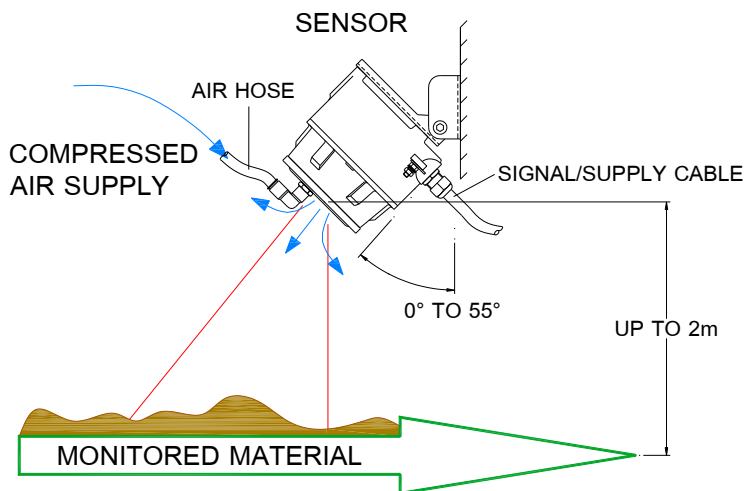
The unit can be used in two principle operating modes. Either relay mode, with its own 24 Vdc power supply or in low power mode (as shown below), see manual D1198 for further details



### System Setup

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.

Typically conveyor widths of 0.8m to 4.2m can be monitored with a sensor mounted up to 2m above the conveyor at an angle of 0° to 55° (see manual D1198)



The chart (left) indicates the correlation between the temperature and size of 'hot spot' anomalies for a typical installation to produce one or more detector channel activations at various trigger level settings.

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

### Specification

<b>Detectors:</b>	2 off - Employing reflective cone optical focusing system.
<b>Spectral Filter:</b>	5 - 14 $\mu\text{m}$ (wide band)
<b>Sensitivity:</b>	10 - 40 $\mu\text{W}$
<b>Transit Speed:</b>	0.5 to 10 m/s *
<b>Sensor Head:</b>	3kg
<b>Material:</b>	Aluminium Alloy LM25
<b>IP Rating:</b>	IP66
<b>Supply Voltage:</b>	
Relay Mode	20 - 30 Vdc
Low Power Mode	13 - 30 Vdc
<b>Supply Current:</b>	
Relay Mode	11 mA Quiescent 26 mA Max / Full Alarm
Low Power Mode	1.8 mA Normal Mode < 350 $\mu\text{A}$ Fault 5 mA Fire + Alarm Load
<b>Temperature:-</b>	-20°C to +60°C
<b>Outputs:</b>	
Alarm/Trip Contact	2 Pole C/O
Fault Contact	1 Pole C/O
Rating	30 Vdc - 500 mA
<b>Indicators:</b>	Internal: 2 off - Red Channel LED's
<b>Purge Air:</b>	
Input Fitting:	10mm Compressed Air Hose Adapter
Pressure:	2.5 psi to 10 psi
Typical Delivery:	30 litres/min

\*For conveyor speeds greater than 6m/s the properties of the monitored material needs to be considered.

### Ordering Information

Description	Part Number
5610: ATEX/IECEx Infra-red Heat Sensor wide band	722-010

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FIRE DETECTION SOLUTIONS